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MASTER OF MILITARY STUDIES

**BREAKING FREE FROM THE GRIPS OF OUR TEACHING TRADITIONS:
Recommendations to Improve Marine Corps Professional Military Education**

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

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Executive Summary

Title: BREAKING FREE FROM THE GRIPS OF OUR TEACHING TRADITIONS:
Recommendations to Improve Marine Corps Professional Military Education

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Thesis: Teaching traditions in a profession like the Marine Corps can have dire consequences on and off the battlefield. The Marine Corps Command and Staff College would serve itself well to break out of its current education model, which, while passable, does not achieve the level of effectiveness that more interactive learning methods can achieve. Experimenting with old and current teaching methods, such as the flipped classroom, the case method, and wargaming can increase learning retention and better meet the purpose of Command and Staff College.

Discussion: Adult learning theory has become increasingly discussed in the last twelve years¹. Unfortunately, Command and Staff College and other USMC PME institutions have not kept pace with these advances, and still use instructional methods based on learning theories from the early 1900s. PME schools typically focus on what is taught (content) and not how it is taught (methods). This emphasis is misplaced. This paper will explore the history of adult learning and the structure of the Command and Staff learning model. This model has significant shortcomings compared to interactive learning methods. These shortcomings appear most frequently in the seminar and lecture methods of teaching, and result in wasted time, lower student and instructor motivation, and, most importantly, decreased learner retention. This paper recommends a combination of old and current, but vastly underutilized, methods of interactive learning. Based on modern research, these models if implemented could immediately increase student learning.

Conclusion: The Marine Corps needs to increase the percentage of interactive education methods in its classes. Current education methods, such as lectures and seminar discussions, contain significant drawbacks and are less effective than available alternatives. Some of these alternatives, like wargaming, the flipped classroom, and the case method can be integrated immediately.

Table of Contents

<i>EXECUTIVE SUMMARY</i>	1
<i>DISCLAIMER</i>	3
<i>PREFACE</i>	4
<i>INTRODUCTION</i>	5
<i>WHAT IS THE CURRENT MODEL OF CSC?</i>	6
<i>HISTORY OF CSC CURRICULUM DEVELOPMENT</i>	8
<i>LECTURE</i>	9
<i>SEMINAR</i>	11
<i>THE ROLE OF ACCREDITATION</i>	13
<i>WASTED TIME</i>	16
<i>TOWARDS A NEW MODEL</i>	17
<i>THE MODEL FOR MANEUVER WARFARE</i>	19
<i>FACULTY TRAINING AND EDUCATION</i>	20
<i>FLIPPED CLASSROOM</i>	22
<i>THE CASE METHOD</i>	23
<i>WARGAMING, SERIOUS GAMES AND FREE PLAY</i>	26
<i>CONCLUSION</i>	29
<i>ENDNOTES</i>	30

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENT AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

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Preface

The topic of PME reform has interested me since I was an instructor at The Basic School. Listening to students and instructors alike lament on “their boring lecture” or an outdated presentation drove me to searching for a new way to do business in the classroom. After months of experimenting with different delivery methods, I was fortunate enough to come in contact with Marine Corps University’s Case Method Project, led by Dr. Bruce Gudmundsson and Damien O’Connell. Along with some likeminded instructors, we began the arduous and friction-riddled process of changing several of our lectures and tactical decision games to decision forcing cases. Some of these are still used in place of lecture today, almost seven years later – no small feat in a place like TBS, where instructor turnover remains a constant challenge. I believe these cases increased both student and instructor comprehension. This paper serves as a vessel to explore “how we got here” in terms of our PME system, and, I hope to help future instructors understand the same. I would like to extend my appreciation to several individuals for their support and advice with the following acknowledgements:

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Introduction

“Academia is conservative (with a small “c,” meaning that it’s slow to change), and rightly so. We wouldn’t want higher education to be buffeted about by the latest fads. But graduate education is conservative even by academic standards — which qualifies it as fossilized.”²This quote from Fordham University professor Leonard Cassuto, who currently studies higher education in America, could have been describing the present state of the US Marine Corps Professional Military Education (PME) system. Modern learning scienceⁱ suggests that teaching adults demands an improved course structure that can keep a learner’s attention and not waste time, a unique challenge to military PME schools and programs.

All Officer PME schools in the United States Marine Corps today share the same structure. This structure includes pre-readings, lecture, and seminar discussion. Unfortunately, this structure is less effective for learning than available adaptive and innovative educational methods for learning retention and increasing decision making ability based on studies comparing interactive methods to lecture and reading. Teaching traditions in a profession like the Marine Corps can have dire consequences on and off the battlefield. The Marine Corps Command and Staff College would serve itself well to break out of its current education model, which, while passable, does not achieve the level of effectiveness that more interactive learning

ⁱ A study by Merrill Herbert, “Facilitating effective adult learning: A case study of higher education at Erie Community College,” suggests that in traditional classroom environments, a lack of critical reflection, self-directed learning exists. Furthermore only 83% of classrooms leverage learning styles and collaborative learning. The study “The Influence of Adult Learners' Self-Directed Learning Readiness and Network Literacy on Online Learning Effectiveness: A Study of Civil Servants in Taiwan” conducted by Horng-Ji Lai suggests that self-directed learning may be the most important element in determining success of adult learners. Sharan Merriam speaks to the importance of these facets (self-directed learning, collaborative learning, leveraging learning styles, critical reflection) in adult learning in her book *Adult Learning: Linking theory and practice*

methods can achieve. Experimenting with old and current teaching methods, such as the flipped classroom, the case method, and wargaming can increase learning retention and better meet the purpose of Command and Staff College.ⁱⁱ

This paper will describe the origins and structure of the current educational model found in Marine Corps PME schools, focusing particularly on the Marine Corps Command and Staff College (CSC) as a representative of the larger military/Marine Corps professional education system. This model refers to the three basic methods of teaching used in both military-wide PME and civilian graduate schools: reading first, lecture, and then seminar discussion on the topic. While each school may count contact hours in other ways,ⁱⁱⁱ the lecture and seminar typically make up a substantial portion of contact hours. In contrast, this paper will provide old and current (but infrequently used) methods to integrate into Marine Corps PME, optimizing learning experiences for adult learners and creating a model of education for maneuver warfare.

What is the current model of CSC?

The current model CSC uses to present information is similar to most USMC PME schools: pre-reading or preparation, practical application, lecture, and seminar. Command and Staff College also includes film, staff rides/battle studies, and tests are countable contact hours as well. The Basic School (TBS) is typically where Marine Corps officers will first encounter this model. At TBS, seminar may take the form of a sand table exercise, practical application, or tactical decision game. Although these methods differ slightly from the traditional roundtable

ⁱⁱ The purpose of Marine Corps Command and Staff College is to “develop critical thinkers, innovative problem solvers, and ethical leaders who will serve as commanders and staff officers in service, joint, interagency, intergovernmental, and multinational organizations confronting complex and uncertain security environments.”

ⁱⁱⁱ This paper breaks down the USMC Command and Staff contact hours later. Most PME schools have similar breakdowns when it comes to the use of lecture and seminar.

discussion seminar, the model still applies in the same manner and seeks the same outcomes. Here Marine officers first see “how instruction should be,” and many in the Marine Corps often refer to this model as “what right looks like.” Students take these experiences and build a frame of reference for how they should receive information. Former flight instructor Samuel Grafton describes these methods to *The Chronicle of Higher Education*: “[the process of education] begins with memorization (helicopter pilots ‘memorize the diagrams of force vectors on rotor blades’ and “learn the schematics and operation of the engine, transmission, and flight controls”). Then comes practice and practical evaluation, with “feedback and techniques to do each maneuver correctly.”³ Marine officers then rise through the ranks to become students and instructors at the Marine Corps’ career-level PME course, the Expeditionary Warfare School (EWS). At EWS, instructors use traditional teaching methods to teach amphibious operations and Marine Air-Ground Task Force operations. Following EWS, Marine officers will typically attend Command and Staff College.^{iv} At this point, military faculty advisors partner with civilian doctors of philosophy, who come with their own frames of reference.

CSC devotes a significant amount of its contact time to the lecture and seminar. A survey of the available 2018 course cards shows 508 contact hours in the academic year.^v Of the 508 hours: 59 hours are dedicated to lecture, 181 hours are dedicated to seminar, 248 hours are dedicated to practical application, 2 hours are dedicated to film, and 18 hours are dedicated to staff rides. Thus, about forty-seven percent of the course is delivered by lecture and seminar,

^{iv} While this paper will focus on USMC CSC, the Naval War College and US Army Command and General Staff College use the same principles of traditional teaching methods. US Marines attend these courses as well.

^v Several courses such as electives, did not have readily available course cards. The eight courses surveyed though comprise the majority of the academic year. A contact hour is an in-class, instructor led event.

and another forty-nine percent is practical application. The following will be a discussion on the history of CSC curriculum, the effectiveness of the lecture and seminar methods, the role of accreditation, and wasted time.

History of CSC Curriculum Development

The general structure of Command and Staff College as seen today was directed by Congress as through the Skelton panel, an investigation into military PME's deference towards the Goldwater-Nichols Department of Defense Reorganization Act of 1986.⁴ The Goldwater-Nichols Act "addresses joint officer personnel policies and provides specific personnel management requirements for the identification, education, training, promotion, and assignment of officers to joint duties."⁵ In 1987, a year after the Goldwater-Nichols Act, the House Armed Services Committee ordered a panel on PME led by Representative Ike Skelton. The Skelton Panel assessed the PME schools' ability to develop officers in both strategy and joint matters and the quality of PME.⁶ The Skelton committee included comparisons on teacher/student ratios and recommendations on the education levels of faculty but made no mention of instructional methods at Command and Staff College.⁷ It is widely accepted that the original structure and curriculum of the Marine Corps Command and Staff College mirrored the US Army Command and General Staff College.⁸ A curriculum review in 1988 built the foundation of the current curriculum structure of the school.⁹ In the history of the Marine Corps Command and Staff College, Lieutenant Colonel (ret) Don Bittner^{vi} describes the nature of that change: "The Command and Staff has always kept pace with the needs of the Marine Corps and its Students.

^{vi} Dr. Bittner, a retired officer of the Marine Corps Reserve, worked, as a civil servant, at the Command and Staff College during the 1980s and 1990s.

This has required only minor shifts in direction or emphasis. Hence, the major focus of change is the evolutionary improvement and expansion of existing traditional programs.”¹⁰

While CSC has continued to evolve since Bittner wrote these words in 1988, curriculum evolution has continued to focus on only subject matter and hours taught. A 2006 study conducted by General (Ret) Charles E. Wilhelm focuses its recommendations on curriculum to keep up with a changing security environment, infrastructure, and faculty size.¹¹ Very little has been documented (or can be found) about delivery methods, and one can assume that, as an institution, CSC has followed similar methods of instruction since the beginning. The following will be a discussion CSC's primary instructional methods, lecture and seminar, which claim the largest portion of contact hours.

Lecture

Using lecture as a primary means of teaching is both outdated and less effective than one may think. In studies conducted as early as 1969 and as recently at 2012, only 10 to 30 percent of the population retains information from a lecture and, more much more important, can apply that information later.¹² Other studies on using the lecture as the only means of instruction noticed only a fourteen percent increase in test scores given before and after the entire course.¹³ Articles and books questioning the effectiveness of the lecture have been published since the mid-1950s to today.¹⁴ The reason schools rely on this method so frequently is twofold: it is easy, and it is what teachers know, having been taught that way themselves. David Gooblar, a professor at the University of Iowa, describes the environment that makes using lecture so easy: “Many of us have moved away from designing our courses entirely around lectures, but a ‘relentless schedule’ still dominates our classrooms. Too often, we construct a course calendar before we’ve met our students — and then we stick to it no matter what.”¹⁵

Professor Gooblar gives us insight into a problem the military knows well. Course schedules must be developed well before students check in and is followed regardless of student comprehension. Dr. Eric Mazur, professor of physics at Harvard University, explains his reasoning behind lecturing as a new professor: “I just mimicked what my instructors had done to me. I think that's what we all do. So, I lectured.”¹⁶ This way of thinking aligns with teacher-based education, or actions focused on making the instructor feel accomplished instead of focusing on the learner. Teachers like Mazur often assume they are performing their job well because of the positive reviews their lectures from peers and students. However, if they devoted the same amount of effort to using interactive learning methods, students may retain more.^{vii}

This problem is worse in Marine Corps schools. Active-duty military instructors typically have less time to prepare to teach, making it more likely they revert to how the person before them taught a class, or how they remember being taught when they were a student in the same course. They also do not typically have PhDs or a great deal of formal teaching experience.^{viii} For those evaluating programs and courses, a well-crafted lecture may seem more effective than an interactive learning environment, especially if the results of learning are not readily apparent. Thus, for Marine Corps PME it is easier to lean on lecture than evolve.

According to Mazur, students retained up to *three times more* using interactive methods compared to when he taught primarily using the lecture method, according to a widely used conceptual test over the last twenty years.¹⁷ When coupled with other less effective methods of instruction, a great deal of learning is “left on the table” when other methods of delivery could

^{vii} Interactive learning methods are sometimes referred to as active or adaptive learning methods and will be used interchangeably in this paper.

^{viii} Most military leaders have a plethora of “informal” teaching experience, otherwise known as “on the job training leadership.”

have been leveraged to promote learning. This is where the Marine Corps should enhance its efforts of curriculum development. Lecture leans heaviest on rote memorization and is typically the least effective method in terms of information retention. Fortunately, the lecture method is often coupled with a seminar discussion at CSC. CSC typically uses these seminar discussions to leverage social learning and reinforce retention. While this method is powerful, it is not without faults.

Seminar

The idea of using a Socratic seminar with student participation is sound in design and can help students to exchange their thoughts, evaluate their perspectives critically, and come to the conclusion about the discussion topic.¹⁸ However, Socratic seminar is prone to instructional pitfalls, and there is evidence that most Socratic seminar is not executed in the spirit of how Socrates intended.¹⁹ In the classroom, Socratic seminars without direct testing^{ix} have been shown to be less favorable to students than traditional teaching methods. Seminars may also vary from instructor to instructor and class to class.²⁰ While CSC leans heavily on this method (36% of contact hours), it has been proven that other discussion methods that outperform the Socratic methods in an online small group setting.²¹ In trying to lead a Socratic seminar, many instructors may fall into traps that diminish the effectiveness the seminars active learning benefits. The most common traps include groupthink, seminar “bullies,” and informal pressure from students and teachers.

One of the major pitfalls of seminar is groupthink. Most Socratic seminars in Command and Staff take place in small groups that rarely change in composition. This is not done at every

^{ix} In the 2017-2018 academic year CSC had no tests. Student grades are generated by discussion, presentations, and papers.

PME school across services, Naval War College, for example, changes small groups every trimester. Maintaining the same group for an entire course creates a problem because the likelihood of a group to fall into a comfortable equilibrium runs high without new members to disrupt the flow, inject new ideas, and challenge status-quo positions.²² This same group is likely to rely on their own experience in Socratic questioning and may stop their study with an incomplete understanding of the problem or solution if the group reaches an equilibrium.²³

Being the heretic in a seminar can come at a social cost as well. There is a great deal of informal pressure when one works closely with a group of learners for months to see things the same way, and if one does not, there may be a cost.²⁴ Undermining one's ideas and discovering new truths can open the door to emotional damage because of the exhausting and destabilizing nature of the Socratic process.

A well planned out seminar can quickly become ineffective if one or a few individuals dominate the discussion. These individuals may talk too often or in a non-productive manner that "derails" the conversation. Other students may become bored while the discussion has become dominated, and boredom has been proven to hinder motivation and cognition, having a negative impact on learning.²⁵ While informal social pressure or a more engaging seminar can control this problem,²⁶ instructors may create informal or subconscious pressure of their own that damages the learning experience.

Teachers can worsen the seminar using poor methods. It takes a great deal of agility to handle student responses, ask follow up questions, and keep track of students as they have side conversations,²⁷ thus demanding a competent and prepared instructor. Another commonplace teacher-induced failure is the practice of feigning ignorance. Giving the students the appearance of thinking for themselves by posing leading questions to get to a predetermined idea.²⁸

Feigning ignorance is one example of the tendency of educators to get in the way of learning, not keeping with the spirit of how Socrates intended this method to be used.²⁹

The Socratic method itself may be ineffective if still not coupled with interactive learning methods. Law professor Robert Dinerstein notes that: “Socratic teaching needs to be supplemented by experiential pedagogies, including simulations, role-plays, small-group brainstorming, the problem method...”³⁰ These methods greatly increase the ability to turn information learned in the Socratic seminar into problem-solving ability and true vocational learning by understanding the environment that creates problems.³¹ If a seminar is blended or paired with interactive learning methods, and executed with a learner-based approach, the retention of information can increase while improving the students’ critical thinking skills relevant for the learner. The issues with seminar mentioned in this section are simply pitfalls to an otherwise effective instructional method. At Command and Staff and across the Marine Corps PME system, this method of instruction has been redefined to accept many of the flaws mentioned earlier. To maximize learning in the time available at Command and Staff College, the school would be well served to correct the deficiencies in its methods, while promoting additional teaching methods that produce greater returns on critical thinking/decision-making and information retention.

The Role of Accreditation

The following is a common definition of scholarly accreditation: “Accreditation is a voluntary activity initiated by the institution that requires a rigorous self-evaluation and an independent, objective appraisal of the overall educational quality by peers. Accreditation emphasizes quality assurance and a commitment to continuous quality enhancement.”³² While words such as “rigorous” and “quality” stand out, the Department of Education’s (DOE)

definition offers plainer language. To the DOE: “The goal of accreditation is to ensure that institutions of higher education meet acceptable levels of quality.”³³ Of note, the DOE standard for excellence or “high quality” is not mentioned. The process of accreditation ensures a school can be deemed professional by professional bodies organized regionally according to the DOE’s standards, but does not ensure it is actually academically challenging to the individual student.

Accreditation is generally believed to have a positive impact on ensuring high quality faculty and administrators.³⁴ A benefit of accreditation includes student access to federal student loan financing.³⁵ Allowing students access to these funds likely means more students, and subsequently, more money. According to the DOE: “In order for students to receive federal student aid from the U.S. Department of Education (Department) for postsecondary study, the institution must be accredited by a ‘nationally recognized’ accreditor (or, for certain vocational institutions, approved by a recognized state approval agency), be authorized by the state in which the institution is located, and receive approval from the Department through a program participation agreement.”³⁶ USMC PME does not require access to these funds, but accreditation establishes degree-granting institutions as “quality” and provides institutional backing (from the accrediting institution) to the degree. The awarding of graduate degrees is important to Intermediate Level PME and the professional development of Marine Corps Officers^x. Providing a Master’s of Military Studies at CSC answers a 2006 recommendation to improve the performance of the PME system by developing students who have a graduate level education on operational art.³⁷ This distinction provides a standard to ensure that Marine Corps PME is professionally “on par” with other local universities and colleges.

^x There is no evidence that a graduate degree makes officers more combat effective, but granting degrees increases the prestige of the officer corps and competes with civilian peers with comparable authority. It also ensures there is an actual core curriculum in place.

Accreditation alone does not ensure excellence in education. While it may improve some administrative functions, according to one study, only 50% of faculty believed that accreditation had a positive effect on student learning.³⁸ The same study also found that institutions have lost confidence in accreditation organizations and the impact on the classroom is minimal.³⁹ The Southern Association of Colleges and Schools (SACS) accredits the Marine Corps Command and Staff College. The SACS document, "The Principles of Accreditation: Foundations for Quality Enhancement," is the foundational document that schools must adhere to if they are to be accepted for accreditation.

Chapter three of the Principles of Accreditation outlines the basic eligibility standards. Only one item in the chapter deals with academics. According to the SACS, a college seeking accreditation "offers all course work required for at least one-degree program at each level at which it awards degrees."⁴⁰ Later, the document outlines the requirements for academic programs: "Educational programs (a) embody a coherent course of study, (b) are compatible with the stated mission and goals of the institution, and (c) are based upon fields of study appropriate to higher education."⁴¹ Thus, critical reading of these statements can be summarized in two central themes. First, schools are free to develop programs as they see fit, so long as they can connect the degree with the course work in a "coherent" manner. Second, these programs have to be professional in subject and related to the overall mission of the institution. SACS does not mention or require in writing standards of academic rigor. Accreditation alone, therefore, does not attest to academic excellence.⁴²

SACS provides far clearer guidelines for faculty in its sixth section. Not only must schools employ adequate full-time employees to support their mission and goals⁴³, but also must justify its staff's qualifications to support the programs it uses to reach its mission.⁴⁴

Furthermore, SACS states: “The institution provides ongoing professional development opportunities for faculty members as teachers, scholars, and practitioners, consistent with the institutional mission.”⁴⁵ Faculty development is critical in all schools but even more so in USMC PME. Unlike typical universities, Command and Staff possesses students who have different specialties, but are all military or civilian leaders. This common ground requires instructors, both military and civilian, to have had relevant experience with military work and life. Therefore, accreditation alone will not guarantee quality of education. Institutions can affect the quality of instruction and curriculum internally by investing in the instructor cadre and staff. Well trained cadres should be the foundation of any PME school if military professionalism is to meet or outperform its sister civilian institutions. This paper will later discuss the importance of well-trained faculty in the “Model for Maneuver Warfare” section.

Wasted time

As mentioned, CSC devotes 47% of its contact time to lecture and seminar. The average lesson has around six hours of time dedicated to it between reading, lecture, and seminar. When one compares the amount of time in lectures at CSC (59 hours or 12%) against the best case expected return (30%) only 17.7 hours of time devoted to lecturing are actually retained over time. If the time devoted to seminar is used as additional lecture, the same rates of retention produce only 54 usable hours out of 181. Thus, these findings support Mazur’s comment about time being “left on the table” when using these instructional methods.

This issue is typical of most PME schools. For instance, the US Army’s “Command and General Staff Officer Course currently devotes roughly 250 school hours of study to mission command, directly or indirectly. This number comes from a total of about 700 hours of core and advanced instruction, going by the 2013–2014 academic year. That looks impressive on paper.

However, only around 100 of the teaching hours truly involve critical thinking as it would be understood outside of PME.”⁴⁶ In contrast to the lecture and a poorly executed seminar, there are several readily available methods to leverage interactive learning and increase retention rates at CSC.

Towards a New Model

This paper does not seek to condemn the lecture. There is evidence that shows courses using lecture alone still have positive results. In a six-thousand student research study, education researcher Richard Hake discovered that in “Fourteen traditional courses which made little or no use of interactive-engagement (IE) methods achieved an average gain. In sharp contrast, 48 IE courses which made substantial use of IE methods achieved an above average gain.”⁴⁷ Lectures and seminars can be executed well. Not every lecture is a person spending an hour talking nonstop to deliver facts. A good lecture can invite discussion and dialogue while engaging the learner. In the military, it is the perfect example of the experienced expert acting as a role model. Lecture can even also integrate interactive methods such as questions with clickers, small-group discussions, and demonstrations. At the same time, seminars can be one of the most useful forms of teaching. Seminar promotes synthesis, or the students ability to “make sense” of the information, which is generally the ultimate goal of education.⁴⁸ Thus, if a teacher avoids the typical pitfalls a seminar can be an enjoyable experience for all involved. The issue arises when the standard of teaching in a school becomes riddled with flaws. Even “cleaning up” effective methods can become difficult due to instructors being stuck in their ways.

People fear change, and the same goes for teachers and students. Many students may very well be initially skeptical of the interactive learning methods discussed later in this paper.

Change can also bring out unanticipated outcomes that are not helpful to the learner or

institution.⁴⁹ Another possibility lies in instructor motivation to use IE teaching methods. Interactive methods can be worse for the learner than traditional if not executed well, or the instructor is unprepared to use this method. This phenomenon occurred most recently at Command and Staff College in academic year 2016-17. Marine Corps University's donor-funded Case Method Project^{xi} attempted to integrate decision-forcing cases into the curriculum on the donor's request. This effort met significant institutional resistance. On top of poor timing, the project wasn't pitched to the instructor cadre well, and civilian instructors were uncomfortable changing the classes they taught and had no incentive to do so. Uniformed instructors typically claimed to be "too busy" learning the curriculum, adjusting to instructor duty, or preparing for a permanent change of station transition to develop an interactive learning class.⁵⁰ As a result, no significant or long-term changes were made, leaving the current instructional methods as the long-term structure of Command and Staff College.

The most important reason not to condemn traditional teaching methods completely is the fact that USMC Command and Staff College has met its mission since its inception. The findings of a 2010 investigation conducted by House Committee on Armed Services, Subcommittee on Oversight and Investigations, found that the Department of Defense's PME system was basically sound.⁵¹ Narrowing the scope to Marine Corps Officer PME, a 2006 study used the same language (basically sound) to describe the state of the PME system.⁵² However, "basically sound" should not be the goal adjective Marine Corps PME strives for. Learner

^{xi} Created in 2008, the Case Method Project was a section of Marine Corps University dedicated to the promotion of the decision-forcing case, or historical immersion problem (which will be discussed later in this paper) at all levels of PME. It was financially supported by the Marine Corps University Foundation, a non-profit, and academically supported by MCU through the establishment of a Case Method Chair, the holder of which ran the project. As a result of gaining no traction at Command and Staff, the private donor pulled his support, which led to the project's disbandment in September 2017.

retention and motivation suffer due the instructional methods CSC currently uses. The final section of this paper will discuss why total overhaul of the school system is unlikely, and outline methods that can be adopted or expanded now to address increase learning retention in PME.

The Model for Maneuver Warfare

This paper proposes a model which uses less lecture, seminar, and inefficient practical application and uses more interactive learning methods such as serious games, flipped classroom, and case studies. Using interactive learning methods to teach military subjects dates at least as far back as the nineteenth century, when Lieutenant Colonel Gerhard Scharnhorst, a student of his regimental commander Emmerich d'Estorff, developed a method meant to foster improvisation and decision-making. Referred to as “the Applicatory Method,” it presented students with problems that asked them to think critically about the situation at hand and think creatively about possible solutions.⁵³ Today, the purpose of Marine Corps Command and Staff College is to “develop critical thinkers, innovative problem solvers, and ethical leaders who will serve as commanders and staff officers in service, joint, interagency, intergovernmental, and multinational organizations confronting complex and uncertain security environments.”⁵⁴ Developing critical thinking and problem-solving skills of officers demands an education model based in the applicatory method. This section will address reforms and instructional methods available now that can improve the school’s ability to meet its stated purpose.

Total overhaul of the current PME system is difficult. While some may argue it is needed, the nature of two to three-year orders for school cadre and commanders make overhaul a challenging goal. In 1993, Colonel Mike Wyly recommended a change to Marine Corps University to encompass Command and Staff College, Expeditionary (then Amphibious) Warfare School, and Command and Control Systems Officer course into one college.⁵⁵ This

college would be highly competitive, and each cadre department (such as The Marine Corps School of Amphibious Warfare) would teach the appropriate level of information to captains and majors separately. Colonel Wyly's MCU campaign plan outlined how this combined school would function in detail. The combined school never came to realization, however. This example helps cage one's expectations to what is reasonably attainable in a short period of time.

Studies have demonstrated that interactive learning methods can produce improved problem-solving ability, critical thinking, and increased learning outcomes.⁵⁶ Specifically, interactive learning methods can produce learning outcomes two standard deviations higher than traditional methods (0.48 +/- 0.14 vs. 0.23 +/- 0.04).⁵⁷ Thus, Command and Staff College should maximize interactive learning opportunities if it hopes to achieve the maximum student retention for its curriculum hours. Interactive learning methods that can be adopted or expanded now include flipped classroom, case method, and wargaming. The first action a school must take to adopt these methods is to ensure its faculty is well trained and prepared for interactive teaching.

Faculty training and education

While his model for Marine Corps University never came to realization, Colonel Wyly explains the importance of faculty in his MCU campaign plan: "Finding and developing excellent faculty is a goal that has been sought after in the Marine Corps for decades."⁵⁸ While the nature of personnel assignments today generally prevents hand picking every faculty member, there are ways to improve their performance.

Wyly's concept for "The School for Faculty Development"⁵⁹ included certification for faculty before they begin instruction. This paper fully supports that proposal. Each individual school should develop a cadre of talented and experienced instructors whose sole responsibility is faculty development. Literature on faculty development suggests that the largest impact on

quality of instruction comes from institutional support in the form of a formal and structured development program, and a climate that supports faculty development and improvement in institutional quality.⁶⁰ Individual schools at MCU should maintain a hand-picked, well versed instructional improvement cadre. An initial course for new instructors to indoctrinate them into the faculty and provide them with teaching instruction should be tailored to each school as necessary. The instructors of this course should be charged with overall quality of instruction and should provide mentorship, coaching, and guidance to other faculty members. If instruction ability is factored into fitness reports while assigned as a faculty under performance, there would be institutional support behind improvement and quality. To prove the importance of institutional support, the Marine Corps is currently experimenting with something called the Innovative Instructor Workshop to address this need. According to the Cognitive Performance Group (CPG),^{xii} advanced development workshops are the key element separating ineffective instructors from effective instructors.⁶¹ This idea is supported by academics, as well.⁶² The Marine Corps should support and institutionalize efforts such as this, while also expanding faculty development at the school level. As a result, the instructor cadre may learn from each other in workshops, and instructors can grow to overcome the problems outlined in the section on seminar. Ensuring an instructor development cadre is available to oversee the quality of instruction and run or develop faculty development is a critical piece of developing an environment that promotes improvement of our instructors.

^{xii} Working with II Corps Solutions, CPG created and facilitates IIW, at the request of the Commandant of the Marine Corps via Marine Corps Combat Development Command. It ran an alpha of the workshop in December 2017, a beta in January 2018, and has four more workshops planned for 2018.

PME schools should not only focus on group activities, but also foster individual development as well. While it is difficult in the military to reward individuals financially as civilian schools can, PME schools could recognize individual instructor efforts such as conference attendance, courses taken, individual research, and other activities that can improve the depth of knowledge in faculty. Faculty writing should also be encouraged and mandated. Aside from writing for journal publication, writing-to-learn activities should be encouraged in faculty development. One example of this in the civilian world involves the Center for Teaching (CFT) at the University of Massachusetts, Amherst. It promotes writing-to-learn activities for faculty and students to increase proficiency and critical thinking.⁶³ The CFT holds that these activities “heightened their sensitivity to student differences and helped them listen to students in ways that aided in building a community of learners in the classroom.”⁶⁴ Creating an environment where students can feel excited about learning will increase motivation in faculty and students alike. The following methods of teaching can assist well trained instructors in making the classroom more exciting, while promoting interactive learning.

Flipped Classroom

Education can be viewed as a two-step process: information transfer and making sense of and assimilating that information.⁶⁵ If the goal is to apply information later, the second step is critical. In traditional teaching methods, this occurs beyond teacher control. Professor Mazur reinforces this point: “In the standard approach, the emphasis in class is on the first, and the second is left to the student on his or her own, outside of the classroom...”⁶⁶ An alternative to traditional teaching methods is known as the “flipped” or “inverted” classroom. One study showed that flipped classroom approaches can produce better instructional effects relative to traditional teaching methods.⁶⁷ It has also been shown that self-directed study can be the most

important element in determining learning success in adults,⁶⁸ while another study showed a three point increase on test scores when compared to a lecture only group.⁶⁹ In the flipped classroom, students read subject material or watch a video before the class and conduct an interactive activity in class related to what they read or watched.⁷⁰ This method leverages practices already in use (assigning pre-reading before class), and in the classroom the learners focus on higher forms of cognitive work, including applying, analyzing, evaluating, and creating.⁷¹ Thus, lecture and seminar focus effort on delivering information, while interactive learning methods make the best use of classroom time available to promote information retention and assimilation. Furthermore, combining interactive learning methods with social learning environments may reinforce each other, reaching students who otherwise may not have retained anything from the lesson.

The social atmosphere of a flipped classroom also has an impact on student motivation. Education researcher Jacqueline McLaughlin, in a research study conducted at the University of North Carolina School of Pharmacy, found that “the flipped classroom has promoted students' empowerment, development, and ability to learn independently or at their own pace.”⁷² Flipping a classroom can help solve the wasted time problem identified earlier in this paper. Maximizing classroom time to reflect on issues students struggled with and eliminating lectures can lead to higher retention in less time.

The Case Method

Studying historical cases has been a method of teaching by analogy in higher education for years. Teaching with cases has proven to increase student engagement⁷³ and produce better ethical sensemaking and ethical decision-making than traditional teaching methods.⁷⁴ This paper will focus on the “Decision-forcing Case (DFC)” or “Historical Immersion Problem (HIP)”

method of case teaching. A decision-forcing case asks students to solve a problem faced by an actual person at some point in the past. A basis in history makes this exercise a form of case study.⁷⁵ Cases are dynamic learning experiences that are interactive and concrete, while simultaneously confusing and disorienting.⁷⁶ These cases leverage social learning to challenge mental models creating an enthusiastic learning environment. The case method directly addresses Colonel Wyly's 1990 claim that there is not enough study of operational history/art and "[the Marine Corps] institutional level of Military education is up to standards."⁷⁷ It does this by blending historical facts with problem solving and critical thinking exercises.

Students typically find cases engaging and stimulating.⁷⁸ Using this method entails students having to explain and defend their decisions, ideally based in the topic of the day, and developing critical thinking through a social context. Analyzing evidence and constructing an argument for a decision develops critical thinking and communication skills. Learners critiquing and defending a position in front of peers proves to be a memorable experience, which increases the likelihood of retention.⁷⁹ In short, the case combines the most significant aspects of andragogy and experiential, social cognitive, and workplace learning.⁸⁰

The traditional structure of a decision forcing case or historical immersion problem "is similar to that of a sandwich. Just as the two basic elements of a sandwich are bread and some sort of filling, the two indispensable elements of a decision-forcing case are a story and a problem."⁸¹ Cases can offer multiple decisions by one protagonist, or be "nested" and offer a scenario throughout an organization or different levels of command, allowing students to see how problems, solutions, and information develop throughout time.⁸² A Marine-centric historical case typically has greater andragogic utility than a lecture, meaning the usefulness is readily apparent as the student works through the case. Cases do not have to be limited to

tactical issues. Any administrative, policy, or decisional issue can be explored if enough literature or sources exist to build a case.

The benefits of the case method are essential to an education in Maneuver Warfare. Colonel Wyly explains: "Studying war also develops our military judgement. Military judgement is central to education in maneuver warfare... Maneuver warfare is judgement warfare."⁸³ Marines of all ranks see the benefit of this teaching methodology. Second Lieutenant Gillon Crichton explains the link between the case method and Marine Corps Doctrine: "The beauty of the case method lies largely in its harnessing of that chaos to teach the student the very kind of creative thinking demanded by Warfighting."⁸⁴ Case studies in all forms are used extensively in graduate schools nationwide. At Harvard Business School and the University of Virginia's Darden Business School, students are exposed to over five hundred cases in their two-year programs.⁸⁵ Marine Corps Command and Staff and other PME courses do use some retrospective cases in some lessons, but they differ dramatically from decision-forcing cases, and they are not integrated to the degree that they should be.^{xiii}^{xiv} Leveraging this instructional method by expanding its use in the curriculum would be appropriate for a maneuver warfare education. Cases can also be combined with other forms of interactive learning. When student decisions in cases are critiqued, the instinctive reflex required to succeed in tactical decision-making is exercised through repeated practice. Short of actual combat, wargaming is the only other venue that can provide the arena to practice.

^{xiii} A retrospective case typically just uses a historical example to teach a point. It is a reflective exercise that does not have associated decisions to be made for students.

^{xiv} As mentioned earlier, ISULC, TBS, and IOC all incorporate DFCs.

Wargaming, serious games and free play

Colonel James C Breckenridge, the Commanding Officer of the Marine Corps Schools articulated the following idea in a *Marine Corps Gazette* article in December of 1929: “Military reasoning should be analytical and critical above everything, because military problems are not susceptible of academic proof; and that which has been proven by force of arms in one place has been disproved in another. There is no formula for waging war or fighting battles; to apply a rule is to invite, or demand, disaster.”⁸⁶ Similar to the case method, using serious games for wargaming is an effective way to train for maneuver warfare. Colonel Wyly describes the relationship between maneuver warfare and wargaming: “Maneuver warfare focuses on the enemy, not on terrain or our internal operations or processes. This means that training with active aggressors is much more important than it was previously.”⁸⁷ In the interwar period, officers at the Naval War College and what was then Marine Corps Schools at Quantico, used wargames to develop the (then) novel concepts of carrier task force operations and amphibious warfare.⁸⁸ In 2015, then Deputy Secretary of Defense Bob Work explained the importance of wargames today: “Wargames are all the more important in an era of multiple strategic challenges requiring joint, multi-dimensional approaches.”⁸⁹

The military’s history with wargames and serious games goes as far back to about four thousand years ago with the Chinese *Wei Hei* and Indian *Chaturanga*.⁹⁰ More recently, video games have been used for recruiting and training with great success. The 2002 *America’s Army* proved to recruit volunteer soldiers at 15% of the cost of more traditional recruiting efforts.⁹¹ Games have been created for convoy training, platoon-level infantry tactics, and supporting arms simulations.⁹² Even a USMC version of doom was made in 1996 to train infantry fire teams with a popular first-person shooter.⁹³ The military’s long history with games proves that many

believe they can help educate or recruit, based on the willingness to experiment with them time and time again.

The nature of war demands flexible and dynamic decision-makers and serious games may help develop these traits. One of the most effective ways to prepare Marines for combat goes beyond developing a plan for an operation, historical or fictional. Wargames offer vicarious experience of the situations and decisions associated with combat. Colonel Wyly describes the value of wargaming in the Marine Corps: "The best way to simulate combat is to allow Marines to exercise their free will on two sides: friendly and aggressor...such training builds the characteristics we want: initiative, imagination, and speed."⁹⁴ By testing the hypothetical possibilities of a given situation, participants can gain firsthand experience instead of a broad and diverse depiction of actual experience told in lectures or experienced in DFCs. Wargaming also produces a significant increase in cohesion of those participating. A study conducted by Eric Walters, a retired Marine who teaches in the US Army PME system, concludes that US Army units that use wargames become more cohesive.⁹⁵ At CSC, wargames only take place during practical application as a fact of the Marine Corps Planning Process. These types of wargames help identify gaps in planning and are terrific preparation for real world planning. However, the amount of time dedicated to these wargames is only about four percent of the overall contact hours at CSC.^{xv} The total time for practical application, 248 hours, is about 49% of the contact hours in the course. By reviewing the conduct of these practical application exercises, more time can be given to wargaming or devoted to serious games as a way to make more impactful lessons.

^{xv} The amount of time spent wargaming a practical application event at CSC is totally dependent on the MILFAC. This percentage assumes 4 hours of wargaming for every major practical application planning exercise at CSC, a generous amount that is a best-case estimate.

Serious games have been proven to have a positive impact on learning not replicated in lecture or seminar. 73% of studies conclude that serious games have a positive impact on learning.⁹⁶ Serious games have proven to increase problem-solving ability and learning motivation,⁹⁷ aligning with the desired end-state of CSC graduates. Serious games demand a place in CSC because it has been proven that they yield a higher level of learning gains and retention than conventional instructional methods (such as the lecture).⁹⁸ Serious games are also increasingly used to change behavior.⁹⁹ In a study on a game meant to increase knowledge on nutrition, a byproduct was an increased ability to make healthier choices about their diet.¹⁰⁰ And serious games may increase the likelihood of role-taking^{xvi} and a willingness to help.¹⁰¹ Using serious games at CSC can be used in a similar manner, with the primary goal of the game to increase decision-making but also challenging a student ethically and morally as well, to build these traits as part of the desired CSC end-state.

Wargames and serious games can be added to CSC in several ways. First, any planning exercise should include a wargame of the plan created. Skipping the wargaming step of the Marine Corps Planning Process can create bad habits by not allowing students to see the flaws with their plan. Time saved by using interactive learning methods can be repurposed with serious games, either tabletop or computer games. Finally, historical wargames require situations to engage the situations faced by decision-makers at the time of the events in question, therefore teaching them a great deal about such things as geography, force structure, technology, and political goals. If a central goal of Command and Staff College is to develop innovative

^{xvi} Role-taking, a cognitive activity, refers to the process by which an individual temporarily imagines or pretends that he or she is another person to gain insight into the other person's thoughts, attitudes, intentions, etc. In short, increasing role-taking can improve one's critical thinking ability.

problem solvers that can compete with our adversaries, adding more wargaming to the curriculum is a low cost, high value way to develop its military and civilian professionals.

Conclusion

The United States Marine Corps' Command and Staff College is not failing. It is, however, less effective than it could be. While it is unlikely that comprehensive structural renovation will take place, there are methods currently available to schools that can increase efficiency in the classroom. The lecture and seminar will always have their place in PME, but they should be complemented with interactive learning methods such as the case method, wargaming, and flipped classroom. CSC leans heavily on lecture, seminar, and practical application at the expense of interactive teaching methods that have been proven to increase learning. Many of these methods are complementary, using one method to reinforce or enhance another, in lieu of having independent lectures or seminar on a given topic. These methods, delivered by highly trained instructor cadres, will have more of an impact on information retention, and development of critical thinking skills. The Marine Corps, specifically Command and Staff College, should adopt and/or expand the current use of these methods to develop a more effective model of education. This new model will produce greater returns on instructional effort while better (when compared to traditional teaching methods) developing "critical thinkers, innovative problem solvers, and ethical leaders,"¹⁰² who will operate in uncertain security environments. If the Marine Corps is serious about education, it should experiment and innovate with instructional methods as aggressively as it does with tactics, techniques, and procedures in operational units.

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