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# THESIS

**WE'RE DOING IT WRONG: ONLINE TRAINING IN THE UNITED STATES ARMY**

by

Peter L. Arendt

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Our military has adopted online training as a solution for propagating standardized training across the formation. However, minimal analysis exists to determine the frequency and effectiveness of mandatory online training in the United States Army, despite the resources and time required to complete mandatory online training. This paper seeks to establish that the effectiveness of online training in the United States Army must be analyzed and reviewed to achieve its maximum potential.

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# WE'RE DOING IT WRONG: ONLINE TRAINING IN THE UNITED STATES ARMY

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# ABSTRACT

Our military has adopted online training as a solution for propagating standardized training across the formation. However, minimal analysis exists to determine the frequency and effectiveness of mandatory online training in the United States Army, despite the resources and time required to complete mandatory online training. This paper seeks to establish that the effectiveness of online training in the United States Army must be analyzed and reviewed to achieve its maximum potential.

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ALMS | Army Learning Management System |
| CAC | Common Access Card (DoD identification card) |
| DoD | Department of Defense |
| GTCC | Government Travel Credit Card |
| HQDA | Headquarters, Department of the Army |
| JKO | Joint Knowledge Online |
| METL | Mission Essential Task List |
| SFOD-A | Special Forces Operational Detachment-Alpha |
| SHARP | Sexual Harassment/Assault Response and Prevention |
| TRADOC | United States Army Training and Doctrine Command |

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# I. INTRODUCTION

## A. ADDRESSING THE PROBLEM WITH ONLINE TRAINING

In the U.S. Army, mandatory online training has become the norm for policy compliance due to its accessibility, relatively simple and standardized implementation, and uniformity in training content. In this thesis, I demonstrate that while online training, or distributed learning, as it is known in Army doctrine, maintains utility, its application must be re-examined. As the Army is a big and complex organization, online training offers a relatively easy method of distributing information to and seeking compliance from soldiers and civilians. However, few organizations or individuals have critically examined the purposes for and effectiveness of mandatory online training. As a result of not understanding either the purposes or effectiveness, attempts to optimize online training fall short. In its current state, mandatory online training in the Army remains onerous for the soldier or Department of the Army civilian. Secretary of Defense Mattis' initiative to reduce the tasks faced by the warfighter in 2017[1] and the resulting series of memorandums released by Secretary of the Army Mark Esper[2] demonstrate that the Army recognizes that reform is needed to reduce the sheer number of tasks faced by the individual soldier and civilian.

The fact that online training in its current format received the critical attention of the most senior leaders in the DoD and Army indicates that transformation is necessary. However, reform of online training is not a simple task. The intent of this thesis is to direct further study on the purpose for and effectiveness of mandatory online training courses and provide immediate recommendations to streamline courses without sacrificing quality. This thesis seeks to provide recommendations to the U.S. Army, in particular those

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[1] Tara Copp, "Mattis: Get Unnecessary Training off Warfighters' Backs," *Military Times*, July 26, 2017, http://www.militarytimes.com/news/your-military/2017/07/25/mattis-get-unnecessary-training-off-warfighters-backs/.

[2] U.S. Army, "Army Secretary Releases Reduction Requirement Memos to Improve Readiness," www.army.mil, accessed July 26, 2018, https://www.army.mil/article/207160/army_secretary_releases_reduction_requirement_memos_to_improve_readiness.

responsible for managing online training in the Army's Training and Doctrine Command, to improve the way the Army conducts mandatory online training.

## B. OPPORTUNITY COSTS

Mandatory online training users face significant opportunity costs that the current system does not account for. Service members conduct online training at the cost of not being able to conduct other valued and necessary requirements. If mandatory online training is not effective, soldiers are using time for online training that could be applied to other, more significant tasks. John Black describes these opportunity costs as

> the amount of other goods and services which could have been obtained instead of any good. If it had not been produced, the resources used in making it could have been used to produce other goods and services instead. If it had not been bought, the money spent on it could have been used to buy the other goods.[3]

Common phrases in the Army, "soldiers are America's most precious resource" and "our scarcest asset is time," demonstrate the opportunity cost for users, particularly if mandatory online training is not effective. Are soldiers and civilians able to use the appropriate time to accomplish the training task at hand, or are they committing hours of training to topics in which they already demonstrate their proficiency? Waiting an arbitrary amount of time for a slide to advance, as some online training courses dictate, indicate some courses prioritize training to time rather than to standard.

Commanders at various levels may prioritize online training for their soldiers above other tasks. In a worst-case scenario, at senior levels of command, such as the brigade or division level, a commander (with well-natured intent) may, with a stroke of a pen or keyboard, order his subordinate commanders to prioritize online training. Potentially, users will cumulatively conduct thousands of hours of training in order to satisfy that requirement as prioritized by the commander. However, as Wong and Gerras explain, the culture of the Army mandates 100 percent compliance in too many tasks.[4] A commander could

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[3] John Black, *Oxford Dictionary of Economics* (New York: Oxford University Press, 1997), 332.

[4] Leonard Wong and Stephen J. Gerras, *Lying to Ourselves: Dishonesty in the Army* Profession (Carlisle Barracks, PA: Army War College, Strategic Studies Institute, 2015).

potentially incorrectly prioritize mandatory online training over combat readiness prior to a combat deployment in an effort to demonstrate compliance with a senior commander's intent, as online training compliance is tangibly quantifiable. Furthermore, soldiers with too many tasks during work hours trying to meet a commander's intent may voluntarily prioritize online training in their non-working hours, which could be time they would have spent recreationally or with family members.

In specialized units, and for specially trained service members, the opportunity cost for online training increases dramatically. Training for Army special forces soldiers, for example, can take between two to three years beyond their entry-level training, with a cost of hundreds of thousands of dollars per soldier. The military also invests heavily in low-density specialty positions such as pilots, who operate sensitive, multi-million-dollar platforms. Yet these service members must conduct the same type of standardized mandatory online training as all other service members, potentially with more frequency due to unit and deployment requirements. This sends a confusing message to experienced special operations soldiers entrusted with sensitive compartmented information, especially those who operate in high-risk environments who must conduct mandatory online training in the same manner as a recently enlisted teenage soldier.

For special forces soldiers, who are required to conduct specialized training at high financial cost and with significant time requirements, such as high altitude military free fall parachute or combat diver operations, maintaining their basic soldier requirements such as mandatory online training comes at particularly high opportunity cost. For example, a Special Forces Operational Detachment-Alpha (SFOD-A) preparing for a four-week Joint Combined Exchange Training (JCET) exercise in Southeast Asia may train for almost three months prior to deployment. The detachment will likely spend a million dollars in training, preparation, and deployment for this JCET. This training regimen may consist of two weeks of military-free-fall exercise in Arizona, two weeks of shooting on flat range, two weeks of small unit tactics patrolling, two weeks of administrative preparation, two weeks in a culminating exercise, and one week of load out and movement. The geographic combatant command (GCC) the detachment is deploying to may require additional online training outside of standard Army requirements, which can add 20 hours of online training

per soldier prior to deployment. Compared to the other training events, mandatory online training comes at an extremely high opportunity cost for these special forces soldiers. The issue of the opportunity cost of online training motivates additional research.

The U.S. Army has not yet analyzed the time online training consumes or the value of that time. The Army spends millions of dollars annually to conduct Mission Essential Tasks (MET) or the key activities required to maintain readiness such as ammunition for weapons ranges and repair parts for vehicles. The Army develops systems to evaluate the results of completing these tasks, such as tank gunnery simulators, testing, and scoring. Furthermore, the Army is willing to send units to Combat Training Centers to test their effectiveness at these tasks. Yet minimal effort is taking place to determine the effectiveness of online training. Despite the importance of the training on topics such as sexual assault, equal opportunity, and racism, no MET analysis exists for online training, and the amount of online training is not quantified in Department of the Army Regulation 350-1, titled *Army Training and Leader Development*.[5] As both tactical units and staff are overwhelmed by these requirements, rather than conducting an analysis of all requirements and presenting this analysis to the next level of command, units may either disregard training requirements, falsify proof of completing requirements, or complete training at the cost of other preparation for the assigned mission. I have seen this happen during my experiences in the Army. Finally, these training requirements remain in place after being established, stacking up with other requirements. I discuss these issues quantitatively in Chapter III.

Several soldiers agreed to anonymously discuss their experiences with mandatory online training to expose the dilemmas online training introduces. In one instance, this soldier recognizes how administrative accountability flaws stymied the intent of Army leadership to address potential sexual harassment/assault response and prevention (SHARP) issues:

> My battalion utilized a varied approach to certain annual training curriculum. I believe there was an overall goal of minimizing the time spent

[5] Department of the Army, *Army Training and Leader Development. AR 350-1.* (Washington, DC: Department of the Army, 2017), http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/r350_1.pdf.

> executing this type of annual training, but it seldom worked. For example, my first year in the battalion, it was only mandatory to complete SHARP training online. The second year, we were required to do SHARP training online and attend an in-person seminar hosted by the battalion SHARP representative. However, this became such a difficult task to account for every soldier in the battalion (due to training, deployments, leave, etc.), that the following year, the only requirement was a memorandum stating that each person in the battalion had attended an in-person seminar. Ultimately, one in-person seminar was hosted and it was made very clear that soldiers who attended should sign the attendance roster for any other soldiers who weren't present. In the end, only a few soldiers went and just signed everyone else's names to get credit for attending. On top of this, we were told shortly afterward that a mistake was made and we were still required to complete SHARP training online again, regardless of the in-person seminar. This entire endeavor was a waste of time and resources and did not achieve the Army's goal of educating its members on SHARP.

Particularly, multiple soldiers responded to the issue of rank and command position, and lack of willingness by senior leaders to conduct their own mandatory online training. One leader commented:

> As the Headquarters Support Company commander, I was administratively responsible for ensuring all annual training requirements were met for every service member in the battalion command element and staff positions. Several of these service members outranked me, including the battalion operations officer, executive officer, and the battalion commander. While the rest of the service members in the company were required to present my company operation sergeant with printed certificates for all annual training, I never received these from the battalion executive officer, operations officer, or battalion commander. Despite my face-to-face and email requests, the issue was always brushed aside and assurances were given that they had completed the training and to just mark them as 'complete.' I still do not know if they ever completed the training or not, but it is quite clear that there was a standard for company-grade officers and enlisted service members that did not apply to field-grade officers.

An officer serving as an aide-de-camp explained:

> Though general officers were required to conduct the same online training as other soldiers, like Internet awareness and sexual assault, it was common practice for members of their personal staff such as the aide-de-camp, executive officer, personal communicator and drivers to conduct the training on the generals' behalf. Although the generals never asked directly for this to be done, the staff conducted the training on the generals' behalf for multiple reasons: first, the generals simply did not have the time to

> conduct multiple one- to two-hour online training nor did anyone feel comfortable asking them to do it. Second, the cost value assessment was that the training was not worth the time, but the general officer was still required to complete the training and had to be the example for the troops he commanded.

The soldiers who provided input for this thesis consider themselves stewards of their profession, received preferential education and assignments in their career fields, and intend to stay in the Army until at least 20 years of service.

Wong and Gerras confirm that these soldiers' experiences are not unique:

> A captain recalled a specific example of dealing with the overwhelming requirements: "For us, it was those little tasks that had to get done when we got returned from predeployment block leave—the number of taskings went through the roof. None [by] themselves were extremely extensive—like a 15-minute online course. The problem was getting your formation to do it with the availability of computers and then the ability to print and prove that you had taken it. So I think that some of the training got lost in translation. For a nine-man squad, they would pick the smartest dude, and he would go and take it nine times for the other members of his squad and then that way they had a certificate to prove that they had completed it."[6]

These experiences are troubling, in that field-grade officers and general officers do not value mandatory online training for themselves and are willing to disregard regulations or lie about completion of online training. These soldiers' comments indicate that mandatory online training requires reform.

## C. TIME TO RETHINK ONLINE TRAINING?

Since the current Secretary of the Army, Mark Esper, was sworn in in November, 2017, the Army has analyzed its mandatory training requirements to reduce redundant or less beneficial training.[7] Secretary Esper, alongside Chief of Staff of the Army Mark Milley, released a series of nine memorandums reducing the amount of mandatory training,

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[6] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*, 8.

[7] U.S. Army, "Secretary of the Army: Dr. Mark T. Esper," Secretary of the Army | The United States Army, accessed August 22, 2018, https://www.army.mil/leaders/sa/bio/.

primarily online training, in the first half of 2018.[8] Aligning with the Secretary of Defense Mattis' initiative to reduce regulations, Secretary Esper's changes fall under "Prioritizing Efforts-Readiness and Lethality."[9]

Senior DoD leaders began analyzing the frequency and relevancy of training requirements in 2017. The Secretary of the U.S. Department of Defense, General James Mattis, ordered a review in July of 2017 to ensure individual and group training nests with unit responsibilities.[10] In August 2017, "Secretary of the Air Force Heather Wilson announced the Air Force will seek to significantly reduce unnecessary Air Force instructions over the next 24 months to allow greater flexibility and mission focus."[11] Surveys indicated that U.S. Airmen must follow 1,300 individual instructions, which the Secretary of the Air Force intends to cut back by over 40 percent.[12] Our military has adopted online training as a solution for propagating standardized training across the formation. However, and understandably with many competing requirements (or instructions, in Air Force verbiage) vying for the attention of commanders, few organizations have dedicated manpower determining the effectiveness of online training.

Secretary Esper's initiative to reduce mandatory online training is a step in the right direction. Instead of over twenty training courses and mandatory online procedures consisting of approximately 40 hours of work annually, such as the TRiPS (Travel Risk Planning System), an easily manipulated vehicular travel risk management tool designed to reduce vehicular accidents, the Army now requires eight mandatory online training

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[8] Meghann Myers, "Good News, Soldiers: The Army Has Slashed Even More Mandatory Training Requirements," *Army Times*, June 7, 2018, https://www.armytimes.com/news/your-army/2018/06/05/good-news-soldiers-the-army-has-slashed-even-more-mandatory-training-requirements/.

[9] U.S. Army, "Army Secretary Releases Reduction Requirement Memos to Improve Readiness."

[10] Department of the Army, *Army Training and Leader Development. AR 350-1.* (Department of the Army, Washington, DC), 4-5, accessed October 12, 2017, http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/r350_1.pdf.

[11] U.S. Air Force, "Air Force to Radically Reduce Instructions," accessed October 30, 2017, http://www.af.mil/News/Article-Display/Article/1267709/air-force-to-radically-reduce-instructions/.

[12] U.S. Air Force, "AF to Reduce Additional Duties," accessed October 30, 2017, http://www.af.mil/News/Article-Display/Article/920094/af-to-reduce-additional-duties/.

courses.[13] These courses now take fewer than 20 hours. However, the remaining mandatory online training courses must still be analyzed for effectiveness, not just duration, and new courses must be examined for effectiveness before implementation. The Army analyzes the amount of time needed to conduct specific tasks, yet often fails to analyze the total amount of mandatory training required. Units and users need an authoritative, easily understood list of mandatory online training (most recently published in 2015 as an authoritative Army Reserve document) to determine the type and amount of training required.[14] In order to quantify the existing amount of online training a unit's soldiers must complete, a unit could outline specific training modules on Mission Essential Task List to determine how many hours of online training are required within a specific amount of time, such as a calendar year.

At the Army War College in 2015, Leonard Wong and Stephen Gerras warned of a need for significant cultural change due to widespread and unchecked systemic lying across the Army.[15] While Wong and Gerras do not specifically address online training in "Lying to Ourselves: Dishonesty in the Army Profession," their work directly applies to this thesis, as "[their] analysis began with an exploration into the avalanche of mandatory training requirements levied throughout the Army. It has been fairly well established that the Army as an institution is quick to pass down requirements to individuals and units regardless of their ability to actually comply with the totality of the requirements."[16] Wong and Gerras discovered:

> In 2002, a U.S. Army War College study tallied all the training directed at company commanders and compared that total to the available number of training days. The analysis concluded that: In the rush by higher headquarters to incorporate every good idea into training, the total number of training days required by all mandatory training directives literally exceeds the number of training days available to company commanders.

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[13] Home, "U.S. Army, TRiPS," accessed October 1, 2018, https://trips.safety.army.mil/army/.

[14] Mike Ferguson, "Three Questions to Fix Army Mandatory Training," U.S. Army War College War Room, April 27, 2018, https://warroom.armywarcollege.edu/articles/three-questions-on-army-mandatory-training/.

[15] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*.

[16] Wong and Gerras, 4.

> Company commanders somehow have to fit 297 days of mandatory requirements into 256 available training days.[17]

Mandatory online training is comparable to an overgrown tree in an orchard of trees. In order to produce a combination of the best and most fruit, the tree must be trimmed to maximize its effectiveness and productivity. Analysis of the effectiveness of mandatory online training is similar to examining the tree's branches and determining which branches to prune.

## D. RESEARCH QUESTION

My central research question is: Within the U.S. Army, under what conditions do online training provide effective value?

Subordinate questions include: has the style and method of delivery for online training become more intuitive over time, evolving with invention of new technology? What are the opportunity costs of online training? Should online training be combined with other methods of training for maximum effectiveness and compared to other training activities, is online training more or less effective? Can and should the U.S. Army make online training more accessible to its soldiers and civilians? Are online training courses intended to demonstrate a trainee's comprehension of a subject, or is it merely a metric of compliance? How should leaders employ mandatory online training at the unit level?

## E. ARGUMENT, TAKE-AWAYS, AND RECOMMENDATIONS

First, this thesis examines the utility of online training from a macro view, which in the Army consists of hundreds of online training courses. Second, this thesis closely scrutinizes mandatory online training, a subset of general online training. The Army requires soldiers to complete eight mandatory courses as a minimum; however, the average soldier will likely complete more than these basic eight courses. Mandatory online training in its current state employs an arbitrary application of frequency. Requirements for frequency seem to develop out of convenience, such as annual or deployment-based timelines.

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[17] Wong and Gerras, 4.

I argue that the two concerns of mandatory training, both effectiveness and drivers, must be examined simultaneously. There are three drivers that motivate online training: nominal purpose, bureaucratic inertia, and contrition. The drivers of bureaucratic inertia and contrition can exacerbate the pendulum swings of too much or too little online training. Understanding these drivers and assessing the effectiveness of online training will prevent future pendular swings and bring the Army to a new plateau of productivity in online training. This new approach avoids the current rationale of reducing or adding the number of courses and hours of training those courses consume.

I also argue that the frequency of mandatory online training in the Army has not been analyzed for effectiveness. In many instances, users must undertake courses that present the same material on an annual basis, confusing measures of input and output. Typically, every 12 months, the user must repeat the same activity during mandatory online training, while an expectation of new or continued positive behavioral change is expected. Unless we study which knowledge or skills obtained from mandatory online training are perishable, the Army cannot determine how to apply frequency of mandatory online training.

Further research to determine the total hours of assigned online training per unit is necessary to determine the scope of requirements placed upon a unit. By tallying total requirements for a unit, and categorizing these requirements by criticality, the U.S. Army prevents overtasking while prioritizing the most essential training. On a scheduled basis, Army units are required to analyze their most essential tasks and brief commanders about which tasks require additional training in order to maintain proficiency.[18] However, many commanders and their staffs have not articulated or standardized the amount of online training they require their subordinates to conduct. Determining the correct content and frequency of online training could reduce the amount of time soldiers spend conducting online training, potentially without negative consequence. I discuss this issue of available time to conduct training further in Chapter III through descriptive analytics.

[18] Colloquially referred to as a "METL analysis briefing."

The results of this study should stimulate a discussion regarding the effectiveness of mandatory online training. As the Secretaries of Defense and the Army became involved in reducing the amount of online training in 2017, significant, high-level discussions have already occurred to address the problems presented by the current state of mandatory online training. The results of this study demonstrate that Secretary Esper's reduction of mandatory online training is a necessary and important first step in reforming online training; however, much work remains. I make two major recommendations in order to continue Secretary Esper's initiative to lighten the warfighter's load.

First, a comprehensive study is required to determine the effectiveness of online training in its current form. Without research, the Army will continue to swing back and forth in its mandatory online training requirements in an attempt to affect organizational and behavioral change. The study should produce recommendations to determine effective content and frequency of online training courses. This study must be completed by U.S. Army Training and Doctrine Command (TRADOC) at a minimum, but based on the Secretary of Army's decision to personally address the problem of too many tasks, could be completed by either a special task force from the Secretary of the Army's office or the Chief of Staff's office.

Second, the burden of mandatory online training should transfer from the user to the proponent of training. The proponent, such as the Army G-1, must determine how to integrate its training with TRADOC in a user-friendly format. Currently, the user and his or her supervisor(s) must track their course completions, monitor how and when to take and re-take online training, and report completion. Instead of the user seeking access across multiple domains, these domains should aggregate access in a single location for the user. This will require greater integration between the Army and the joint Department of Defense training requirements. Again, at a minimum, this integration must be addressed by TRADOC, but could be assigned to higher levels within the Army.

## F. THESIS ROADMAP

### 1. Overview

This research uses both quantitative and qualitative tools to tackle this complex issue. The quantitative analysis characterizes the problem by determining the amount of time online training consumes and the impact of Secretary Esper's 2018 reduction of mandatory online training. Qualitative analysis demonstrates, through a plausibility probe case study, how a corporate organization, Zillow Group, conducts their online training.[19] Additionally, I provide recommendations for transforming mandatory online training, including easily implemented changes like test-out options for users to demonstrate retention of course material from previous training iterations.

### 2. Chapter Approach

Chapter II discusses the need for online training and the history of online training in the Army and suggests a theory of three drivers of online training. These three drivers are the nominal purpose of online training as a rational and inexpensive way to train, bureaucratic inertia preventing innovation and change in training, and online training as a demonstration of contrition as a costly signal to external stakeholders for a significant infraction. Using an adapted model through the Gartner Hype Cycle, I suggest that the amount of mandatory online training will continue to wax and wane unless its effectiveness is analyzed.

In Chapter III, I explore differences before and after Secretary Esper's memorandums reduced online training in 2018. These descriptive analytics also provide four outcomes: the lack of coordination between commands, accessibility challenges, time and travel as triggers for training, and the objective of training. Following the adoption of online training in the Army, online training requirements continued to grow as the simplicity in developing course content and mandating new courses increased through

[19] Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: MIT Press, 2004), 74-75.

technological advances. These requirements proliferated unabated until Secretary Esper recently addressed the issue.

In Chapter IV, through analysis of an international corporation with thousands of employees spread across geographically diverse locations, we can understand how a multi-million or -billion-dollar corporation driven by a bottom line is able to mitigate risk through online training and how they leverage online learning. I address how one corporation, the Zillow Group, applies online training. Many legal and consulting firms offer corporate solutions to legally address government regulations for mandatory training, as problems with online training are not an isolated issue within the Department of Defense. The importance of the online learning and training space is indicated by its valuation: as of 2015, the online learning and training industry was worth $107 billion USD.[20] Organizations in and out of government, both small and large, must manage various risks by training their employees. An innovative corporation that answers to shareholders takes a different approach to risk management and how employees are treated and understood. While there are significant differences in how Zillow Group and the Army operate as organizations, the intended purpose of online training is the same.

In Chapter V, I provide a way forward for the Army to change mandatory online training, what impacts occur when the pendulum of online training makes significant movements, and where further research is needed.

[20] T. J. McCue, "Online Learning Industry Poised for $107 Billion In 2015," *Forbes*, accessed March 18, 2018, https://www.forbes.com/sites/tjmccue/2014/08/27/online-learning-industry-poised-for-107-billion-in-2015/.

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# II. BACKGROUND OF ARMY ONLINE TRAINING AND THEORIES OF ONLINE TRAINING

## A. INTRODUCTION

In order to understand the impetus for online training, we must understand why online training exists and what drives this training. Does the nominal need for improved skills drive online training, or are there other, less useful drivers? For current organizational and leadership challenges in the military, such as sexual harassment, mandatory online training can be employed as a signal. In this example of a challenge the military faces, senior leaders in the military are signaling to Congress that they are addressing infractions with outward shows of contrition.[21] Because online training is a measurable, quantitative action, military leaders can signal they are acting by educating their subordinates to affect organizational change. However, because the current methodology of online training is not meeting its intended goal of policy compliance, individuals are simply accomplishing a task in response to a need for policy compliance instead of organizational and individual behavioral change. I explore these topics in the following sections and show that these different drivers interact in unintended ways. Understanding how these drivers interact provides a greater understanding of how to reform online training.

## B. BASIS FOR RESEARCH

### 1. Need for Low-Cost Training for All Organizations.

All organizations, whether government, non-profit, or for-profit, seek to maximize employee productivity while minimizing risk. Technological developments, beginning with the Internet, allowed organizations to diversify human resource management and create low-cost, computer-based online training. Further developments in the field of distance learning offered a viable method for low-cost training, either as a stand-alone training or in a blended option of in-person and online training.

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[21] Department of Defense, *Department of Defense Fiscal Year 2017 Annual Report on Sexual Assault in the Military. Appendix F Sexual Harassment Data* (Washington, DC: Department of Defense, 2017), http://sapr.mil/public/docs/reports/FY17_Annual/Appendix_F_Sexual_Harassment_Data.pdf.

### 2. History of U.S. Army Training Philosophy and Methodology

The Army has dictated training in a top-down manner for many years. Yet it appears that following the initial adoption of technology for online training, many mandatory online training courses seem stuck in an early digital model. For example, from my own experience and in discussions with fellow servicemembers, many of the current courses' content for online training consists of Microsoft PowerPoint slides with a timer dictating when the user can proceed to the next slide. However, the Army recognizes the need for effective learning delivery and content. The *Army University - Army Learning Strategy*, published in July 2017, states "we must take a comprehensive approach to curriculum development, seeking to blend aspects of both 'training'…and 'education'… along with high-yield instructional design and delivery approaches - into an integrated continuum."[22] With the recent reorganization of the Army's digital learning program, the Army Learning Content and Management Capability (ALCMC), into the Army University, the Army is taking a more unified approach to centralizing its education mechanisms.[23] A recent push for mobile learning has led to the creation of a mobile training component within the ALCMC.[24]

Online training within the U.S. Army can be categorized into three areas: first, Headquarters, Department of the Army (HQDA) mandated training; second, specialty or unit-dictated training; and third, travel-related (deployment or permanent change of station) training dictated by various proponents, but commonly by the Geographic Combatant Command (GCC) or U.S. ambassador for a specific country or geographic area. For the first category, a consolidated list of training requirements for operational units, as opposed to initial entry training or career development training, is dictated by HQDA in Army Regulation 350-1, Appendix G.[25] The Army Learning Content and Management

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[22] Army University, *Army University - Army Learning Strategy* (Fort Leavenworth, KS: The Army University, 2017), 10, https://armyu.army.mil/sites/default/files/documents/Army_Learning_Strategy_24_July_2017_(Signed).pdf.

[23] DL Star, "TADLP Realigned: Renamed & Ready Under Army University," *DL Star* 27 (Fall 2017): 4-5.

[24] DL Star.

[25] Department of the Army, *Army Training and Leader Development,* 167.

Capability (ALCMC) has the authority per AR 350-1 to deliver online training. The Army Learning Management System (ALMS) is the online location for the majority of the Army's online training, but joint training is available through Joint Knowledge Online (JKO). Training requirements are conducted annually, semiannually, quarterly, upon redeployment, or are ongoing. The authority and genesis of this training originates from the Department of the Army, which dictates:

> Training is an administrative control (ADCON) authority of the Army. In accordance with Title 10, United States Code, Section 3013b, the Secretary of the Army is responsible for the training of all Army forces, including those assigned to combatant commands (COCOMs). Army unit commanders are responsible for the training proficiency of their unit and, when required, for certifying training readiness. Commanders are responsible for confirming that training has been conducted to standard and within prescribed time periods.[26]

To my understanding, no quantitative analysis exists in regard to the amount of cumulative online training for a specific unit or for the entirety of the Army.[27] The Department of the Army began a review of existing online training in an attempt to quantify it 2015, but did not conclude the study.[28] Additionally, neither mandatory annual online training nor theater-specific training nests within a unit's Mission Essential Task List (METL). These problems can multiply within low-density units, or units with specialized missions such as special operations forces (SOF), as the general mandatory level of training may not be appropriate for the members of the unit. For example, while all incoming special forces-qualified soldiers are Survival, Evasion, Resistance and Escape (SERE) Level C graduates, prior to Secretary Esper's series of memorandums in 2018 reducing mandatory Army tasks and training, they were required to take SERE 100.2 training annually or every time they entered a specific Geographic Combatant Command. SERE 100.2 is SERE Level A training, an online course, which is less comprehensive than SERE

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[26] Department of the Army, 4-5.

[27] Leonard Wong, "Online Mandatory Training," January 11, 2018, email message to author.

[28] Wong.

Level C, a three-week long resident course that "encompasses full-spectrum training including academics and resistance training labs."[29]

Complicating the issue further, 1st Special Forces Command addressed this issue in the mid-2010s by issuing a memorandum exempting special forces soldiers from SERE 100.2 training. However, this memorandum was not fully distributed to the lowest levels of the 1st Special Forces Command, and some special forces operational groups still required SERE 100.2 training while others did not.

### 3. Computer-Based Training and Philosophies

Beginning in the 1950s, the Department of Defense began investing in computer-assisted instruction.[30] As early as 1979, researchers recognized the cost effectiveness of employing wide-based computer-assisted instruction in the military.[31] Yet researchers have taken different approaches to evaluating training. Sein and Robey acknowledge the differences in individual learning styles and discuss analyzing various individual characteristics in trainees versus the effectiveness of training methods.[32] Alvarez, Salas, and Garofano delineate the difference between training evaluation and training effectiveness: "Training evaluation is a methodological approach for measuring learning outcomes. Training effectiveness is a theoretical approach for understanding those outcomes."[33] Today, blended learning, defined by both online training combined with face-to-face instruction, is seen as an effective method of instruction; however, this may

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[29] Erik Olsen, "SERE Training Develops Leaders for Complex Environment," U.S. Army, accessed November 28, 2018, https://www.army.mil/article/138765/sere_training_develops_leaders_for_complex_environment.

[30] J.D. Fletcher, "Education and Training Technology in the Military," *Science* 323, no. 5910 (January 2009): 72, https://doi.org/DOI: 10.1126/science.1167778.

[31] Jesse Orlansky and Joseph String, *Cost-Effectiveness of Computer-Based Instruction in Military Training* (Arlington, VA: Institute for Defense Analysis, 1979).

[32] Maung K Sein and Daniel Robey, "Learning Style and the Efficacy of Computer Training Methods," *Perceptual and Motor Skills* 72, no. 1 (1991): 243.

[33] Kaye Alvarez, Eduardo Salas, and Christina M Garofano, "An Integrated Model of Training Evaluation and Effectiveness," *Human Resource Development Review* 3, no. 4 (2004): 387.

not suit all Army-mandated training due to individual and unit operational requirements and operational tempo.[34]

## C. THEORY AND PURPOSE

### 1. Arguments for and Drivers of Online Training

Online training should improve a soldier's skills and capabilities with the effects of positive organizational and individual behavioral change. I argue, however, that there are three primary drivers of online training: first, online training fulfills its nominal purpose as a skills-enhancing means of increasing knowledge and abilities; second, online training results from thoughtless bureaucratic inertia; and third, online training sends a costly signal of contrition, primarily as a means of demonstrating desired change resulting from significant negative actions or attitudes. These three drivers–the nominal purpose, bureaucratic inertia and contrition–interact together to exacerbate the strain online training produces combined with the problem of too many tasks.

My analysis suggests that bureaucratic inertia and the signal of contrition have overcome the desired nominal intent of online training. Following the adoption of online training in the Army, requirements continued to grow as the ease of developing course content and mandating new courses increased through technological advances. These requirements proliferated unabated until Secretary Esper recently addressed the issue. I discuss these three drivers and the ways they interact together.

#### *a. Nominal Purpose of Online Training: Skill Enhancement*

The first driver of online training is the rational, nominal purpose for training. When first developed, online training intended to offer an efficient, inexpensive way to provide standardized skills and training. Today, the Army and DoD state that this is the purpose of online training. The Army Learning Management System (ALMS), the largest host for online training in the Army, contends that:

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[34] Barbara Means et al., "The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature," *Teachers College Record* 115, no. 3 (2013): 1-47.

> DLS [Distributed Learning System] provides a fully automated, seamless, and web-accessible Army training and education network. The primary goal of DLS is to sustain readiness and provide standardized instruction in a resource-constrained environment of downsized force structure and increased operational demands such as anti-terrorism, force protection, and deployments. DLS addresses the development and fielding of a modernized training system which will deliver standardized individual, professional military education and self-development training to Soldiers, civilian employees, and units at the right place and time using multiple means and technologies.[35]

Furthermore, Joint Knowledge Online (JKO) provides the

> DoD advanced distributed learning capability for military and civilian individual and staff online training. It is the Joint Staff system of record for Joint Staff annual training requirements. Joint, Interagency, Inter-government and Multinational Stakeholders use JKO for a cost efficient, distributed learning solution to meet their online training needs. The JKO team of learning technology, instructional systems design, and training professionals develop media-rich, interactive web-based courses, small team simulation exercises, and train others to fully leverage JKO to manage their unique, online training requirements.[36]

The nominal purpose of online training is to provide skills and training to soldiers efficiently and inexpensively. This likely remains the case for some of the skill-based, online training courses for low-density military occupational specialties which provide soldiers specific training opportunities. In the case of mandatory online training, however, the well-intentioned nominal purpose driver may be overtaken by the two other drivers of bureaucratic inertia and contrition.

#### *b. Bureaucratic Inertia*

The second driver of online training, bureaucratic inertia, results from the nature of the organization itself. The rigidity of the military and desire for regulation and procedure produce a self-induced roadblock when innovation and critical thinking could encourage positive organizational evolution. Stone writes:

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[35] U.S. Army, "The Army Learning Management System Product Manager, Distributed Learning System," August 18, 2018, https://www.dls.army.mil/ALMS_Overview.pdf.

[36] Joint Knowledge Online, "JKO Fact Sheet," September 6, 2016, http://jko.jten.mil/docs/JKOFactSheet6Sep16.pdf.

> Military organizations are designed to operate in the uncertain environment that characterizes war, with the result that they have established modes of procedure that are intended to minimize uncertainty, but that may also stifle flexibility. Strict discipline and rigid hierarchies, along with standard operating procedures, drills, and parsimonious forms of language, contribute to an intellectual climate that is inimical to creative thought.[37]

The lack of suitability for creativity, however, is not found in the military alone. Bureaucratic functions are found throughout large organizations and government, and widespread innovation is often stifled, particularly if small developments are made in other areas. Halperin and Clapp explain how

> the bureaucratic system is basically inert; it moves only when pushed hard and persistently. The majority of bureaucrats prefer to maintain the status quo, and at any one time only a small group is advocating change. The time and resources of any one person in the bureaucracy is limited, and when a participant does desire change, he or she must choose carefully the issues on which to do battle.[38]

The depth and breadth of the military prevent agile transformation in an organization providing something as important as warfighting on behalf of the United States of America. As a heavily bureaucratic organization, the military inhibits organizational change. Rothstein describes the challenge of innovation within the military bureaucratic process:

> An attrition-based military force is inward regarding. This quality, in a country with large armed forces, cannot help but produce a complex internal structure that is overregulated, bureaucratic, and rigid to a point that inhibits innovation. Additionally, internal operations in large, inward-regarding organizations have a tendency to absorb a great deal of the energy of staffs and commanders, thereby reducing the amount of effort available to tackle the intricacies of external issues.[39]

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[37] Theo Farrell and Terry Terriff, *The Sources of Military Change: Culture, Politics, Technology* (Boulder, CO: Lynne Rienner Publishers, 2002), 188.

[38] Morton H. Halperin and Priscilla Clapp, *Bureaucratic Politics and Foreign Policy* (Washington, DC: Brookings Institution Press, 2007), 99.

[39] Hy S. Rothstein, *Afghanistan and the Troubled Future of Unconventional Warfare* (Annapolis, MD: Naval Institute Press, 2006), 3.

These authors describe bureaucratic organizations, such as the military, as entities which resist critical thinking in areas like educational reform, considered an external issue by those leading and operating within deploying units.

Bureaucrats, as Niskanen describes, are concerned about "salary, perquisites of the office, public reputation, power, patronage, output of the bureau, ease of making changes and ease of managing the bureau" to increase their own personal stake in bureaucracy.[40] Niskanen describes his view of bureaucrats as stakeholders in their bureaucratic fiefdoms. By wielding power over other components of the organization, bureaucratic entities continue to grow unchecked, and their ostensible role disappears. Niskanen explains that:

> Bureaucracy and representative government are the creations of men. They should be the instruments of men. The parallel growth of bureaucracy and national government, however, has made these institutions less responsive, to the point of confusion about whether the people or these institutions are effectively sovereign.[41]

A significant demonstration of the problem of unchecked bureaucratic power, and the lack of checks and balances on that power, is the level of attention that online training is receiving from national-level leadership. Until the issue of too many meaningless tasks was raised to the Secretary of Defense, online training continued to accumulate, with the burden of navigating and accomplishing training resting squarely on the shoulders of service members and their supervisors.[42] If online training reform can lead to reduction of bureaucratic inertia, thereby enabling the warfighter, the Army is well advised to begin such a reform.

### *c. Contrition*

For the third driver, mandatory online training is developed as a result of a shock, or infraction, and subsequent training requirements perform an outward show of contrition. This driver is closely aligned with costly signal literature in economics. Despite knowing

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[40] William A. Niskanen, *Bureaucracy and Representative Government* (Chicago: Aldine Publishing Company, 1971), 38.

[41] Niskanen, 230.

[42] Copp, "Mattis."

that mandatory online training is generally cheaper than in-person training, online training requires cost to develop and employ, and contrition indicates the military's willingness to undergo drastic measures as a response to an infraction. The amount of outward contrition shown must be proportional to the cost incurred.

Military leadership employs online training as a low-cost, easily distributed, and immediately measurable means of signaling to oversight entities such as Congress. Spence, one of the early economist authors on signaling, discusses the cost of job market signaling as a cost between the employer and prospective employee.[43] Specific costs must be incurred in order for an employer to correctly identify and hire the right employee. Employers and employees use signals to demonstrate suitability, just as the military incurs cost to signal to Congress that it understands the cost of infractions and demonstrates contrition. Using animal behavior as a model, Maynard Smith agrees with Spence in that "if costs and benefits vary uniformly over the whole range, reliable signals must be costly."[44] Through his studies of human social interaction, Pentland develops a new methodology for understanding signals suggesting that

> honest signaling—in which speaker *attitude* or *intention* is conveyed through unconscious behavior, such as changes in the amplitude and frequency of prosodic and gestural activities. This framework is based on the literature of animal communication and social psychology, and is different from the linguistic framework in that it centers on nonlinguistic, unconscious signals about the social situation.[45]

The argument that the military's "*attitude* and *intention"* is conveyed through unconscious behavior is not limited to, but rather well demonstrated by the example of SHARP training.[46] The DoD publishes annual reports to signal that it addresses these problems through training, but does not publish statistics regarding the effectiveness of mandatory

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[43] Michael Spence, "Job Market Signaling," *The Quarterly Journal of Economics* 87, no. 3 (August 1973): 355-74.

[44] J. Maynard Smith, "Must Reliable Signals Always Be Costly?," *Animal Behaviour* 47, no. 5 (1994): 1115-20.

[45] Alex Pentland, *Honest Signals: How They Shape Our World* (Cambridge, MA: MIT Press, 2010), 107.

[46] Pentland, 107.

online training.[47] While I recognize determining effectiveness is a challenging task, the DoD possesses the resources to begin such a study, as indicated by the thoroughness of its annual sexual assault reporting.[48]

Costly apologies are a way for an apologizer (in this case, the DoD) to signal to a superior (Congress) how sorry the apologizer is, and that the apology came with great cost. Psychologists and economists contend that increasing the amount of cost when apologizing is necessary to show a significant amount of contrition.[49] Ho explains, "the value of an apology is found to be proportional to the cost; apologies without cost have no value at all."[50] Saad expands on the concept of proportionality:

> In addition to the financial and/or physical costs of honest apologies, these are typically costly in terms of one's ego. Specifically, a heartfelt apology requires that the apologizer approach the grieved person with humility, contriteness, and deference.[51]

Mandatory online training is often used by senior Army leaders, despite potential lack of knowledge or confidence in its effectiveness, as a signal of contrition in the way of costly apology. Quantifying that thousands of soldiers have each consumed even twenty minutes of mandatory online training, totaling in tens of thousands of man-hours, is a significant cost as a response to a safety infraction like vehicular accidents while on leave.[52] Watanabe and Ohtsubo approach the issue from a perspective of shame found prevalently in East Asian culture: "making a costly apology or inflicting self-punishment after an unintentional

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[47] Department of Defense, *Department of Defense Fiscal Year 2017 Annual Report on Sexual Assault in the Military. Appendix F Sexual Harassment Data*.

[48] Department of Defense.

[49] Benjamin Ho, "Apologies as Signals: With Evidence from a Trust Game," *Management Science* 58, no. 1 (January 2012): 141-58.

[50] Ho.

[51] Gad Saad, "The Secret to an Effective Apology: It Must Be Costly!," *Psychology Today,* accessed November 28, 2018, http://www.psychologytoday.com/blog/homo-consumericus/200909/the-secret-effective-apology-it-must-be-costly.

[52] U.S. Army, TRiPS.

transgression can serve as a costly signal of the transgressor's benign intention."[53] Despite Army leadership's best intentions in risk management, an uptick in infractions must be followed by a costly signal, often demonstrated through a medium like mandatory online training.

Testing these two actual yet unintended drivers (signals of bureaucratic inertia and contrition) of mandatory online training against each other is an opportunity for further research. Chronological analysis of the growth of mandatory online training, and the origin and intent of that training, could support the driver of bureaucratic inertia. Data obtained from analysis of the timing of Congressional hearings (where the military is held accountable for infractions) and the likely result of increase in mandatory training addressing these issues would support the signal of contrition driver.

### 2. Applying These Drivers to the Gartner Hype Cycle

Much research demonstrates how organizations dedicate significant amounts of resources in the wake of exogenous shocks. The Gartner Hype Cycle constitutes a useful tool for capturing the dynamics of technological inputs and the resulting flux in effectiveness over time.[54] By adapting the Gartner Hype Cycle in Figure 1 to the application of mandatory training in the Army, I show that Secretary Esper's reduction of training is appropriate but not the desired end state for drastic improvement of online training. If we continue to examine the issue of online training solely as a time consumption problem, the pendulum will swing between too much or too little. The drivers of bureaucratic inertia and contrition intensify these pendulum swings. The current state of required training must taper into a steadier application of online training. Developing measures of effectiveness will help align and maintain online training on the plateau of productivity, which is the proper application of online training in regard to frequency and

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[53] E. Watanabe and Y. Ohtsubo, "Costly Apology and Self-Punishment after an Unintentional Transgression," *Journal of Evolutionary Psychology* 10, no. 3 (September 2012): 4, https://doi.org/10.1556/JEP.10.2012.3.1.

[54] Gartner, "Hype Cycle Research Methodology," accessed October 2, 2018, https://www.gartner.com/en/research/methodologies/gartner-hype-cycle.

effectiveness. Currently, online training can be plotted along the slope of enlightenment in the Gartner Hype Cycle.

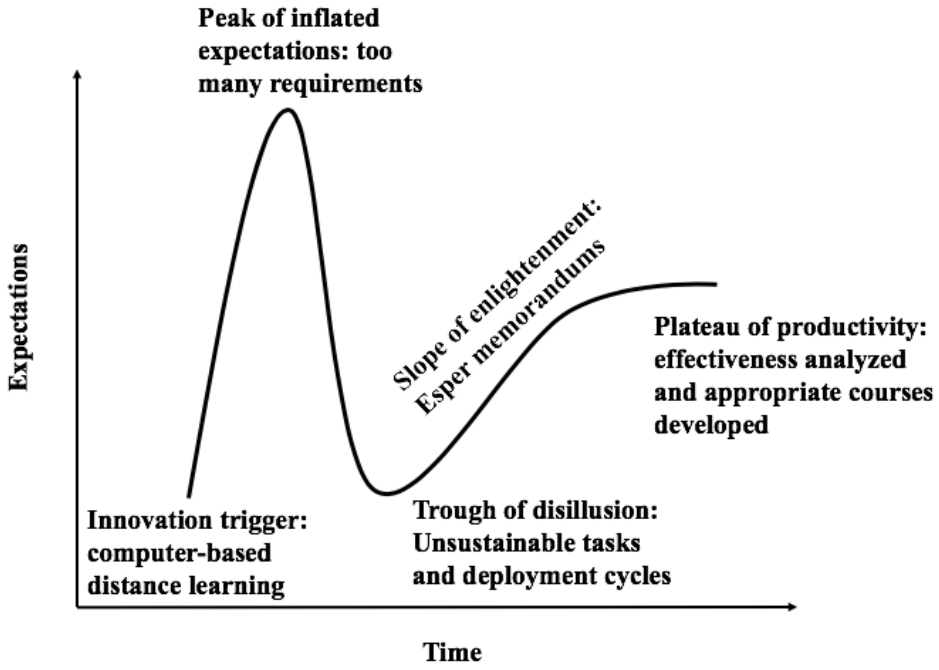


Figure 1. Adaptation of Gartner Hype Cycle in Army mandatory online training.[55]

The Army's application of distributed learning through online training began with more frequent use of the Internet. Training and Doctrine Command (TRADOC) developed the Army Learning Management System (ALMS) beginning in the late 1990s, and it was first fielded in 2004.[56] As Microsoft Office PowerPoint popularity grew in the Department of Defense, preloaded onto computers with Microsoft operating systems as part of Microsoft Office, the use of PowerPoint slides with timers and online course material were

[55] Adapted from "Hype Cycle Research Methodology."

[56] U.S. Army, "The Army Learning Management System Product Manager, Distributed Learning System."

likely introduced as some of the first mandatory online training. This could be described as the innovation trigger along the Gartner Hype Cycle.

The Army reached the peak of inflated expectations quickly with online training with continued combat operations during the Global War on Terror. As new training materials were introduced alongside lengthy combat deployment cycles, including pre-deployment, deployment, and post-deployment actions, soldiers could not meet all requirements imposed by Army leadership. Prior to widespread adoption of online training, as early as 2002, Wong describes that out of 256 available training days, soldiers were required to complete 297 days of prescribed training.[57] As the Global War on Terror progressed and tasks increased, many soldiers and leaders stated their compliance with mandatory online training in order to focus on combat preparation, while likely not complying with requirements. The driver of bureaucratic inertia likely distended this loop over time as shown in Figure 2, as the Army created additional bureaucratic requirements for the pressure caused by a surge in deployments. Furthermore, a division between senior levels (designing and distributing new training modules, and assuming compliance) and lower levels (completing training, but without behavioral modification, or worse, lying about completing training) of the Army could have increased the depth (trough) of the hype cycle.

The Army likely reached the trough of disillusionment with online training during the height of combat deployments in Iraq and Afghanistan.[58] Distributed learning became the chosen medium to enforce mandatory training compliance during and in between deployments. In this case, the driver of contrition in Figure 2 likely extended the trough as the Army responded for its infractions. The Army struggled, fighting a non-linear enemy during the Global War on Terror, adopting a counterinsurgency approach mid-stride.[59]

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[57] Leonard Wong, *Stifling Innovation: Developing Tomorrow's Leaders Today* (Carlisle Barracks, PA: Army War College Strategic Studies Institute, 2002), l.

[58] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*, 13.

[59] John A Nagl et al., *The U.S. Army/Marine Corps Counterinsurgency Field Manual* (Chicago: University of Chicago Press, 2008).

Lengthy combat deployments increased problems like divorce for soldiers, resulting in additional training for re-integrating with family upon return from a combat deployment.[60]

The slope of enlightenment began when Secretary of Defense Mattis began to reduce the number of tasks and requirements in the Department of Defense bureaucracy in 2017.[61] The Army is now moving forward on the way towards the plateau of productivity, after Secretary Esper's release of memorandums reducing the amount of mandatory online training in 2018. However, the road to the plateau of productivity is not a given. In order to prevent another loop from taking place in the hype cycle, the Army must analyze the effectiveness of online training and prevent oscillation to another peak. The Army should seize this historical moment in the reduction of mandatory tasks and training to begin to measure the effectiveness of its mandatory online training. While Secretary Esper's reduction of online training is a step in the right direction, I predict the Army will likely continue to oscillate between excessive or insufficient amounts of mandatory online training if it does not begin to analyze the effectiveness of online training.

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[60] Sebastian Negrusa, Brighita Negrusa, and James Hosek, "Gone to War: Have Deployments Increased Divorces?," *Journal of Population Economics* 27, no. 2 (2014): 473-96.

[61] Copp, "Mattis."

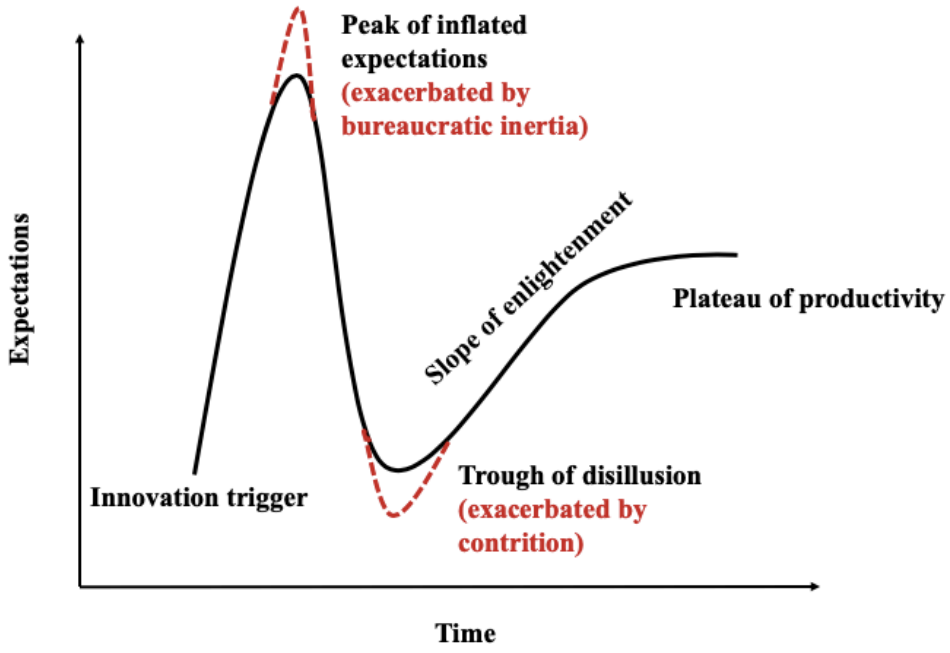


Figure 2. Hype Cycle with distended peaks and troughs.[62]

## D. CONCLUSION

The Army correctly determined that mandatory online training is a serious challenge that needs to be addressed. What began in the early 1990s as a technological development intended to simplify educational difficulties transformed in an unwieldy, bureaucratically challenged process, a signal of contrition, or a combination of the two theories. Measuring effectiveness will help resolve the negative effects of these drivers. Determining the effectiveness of online training, not the amount of training, will prevent future pendulum swings and help the Army ease towards the plateau of productivity.

Determining the correct content and frequency of online training could reduce the amount of time soldiers spend conducting online training, potentially without negative consequence. If a service member is expected to appropriate a significant amount of time towards mandatory training through the medium of the Internet, yet the amount or

[62] Adapted from "Hype Cycle Research Methodology."

effectiveness of the training has not been quantified, then additional research should be conducted to answer these questions. While I have begun to examine the issue of mandatory online training qualitatively, further quantitative research through descriptive analytics will provide more comprehensive analysis.

# III. REVIEW OF DESCRIPTIVE ANALYTICS FOR ARMY MANDATORY ONLINE TRAINING

## A. INTRODUCTION

The current implementation of mandatory online training is a roughshod swing at attempting to modify behavior and instigate organizational change. Using descriptive analytics, I demonstrate the need for more understanding of the current effectiveness of mandatory online training. Descriptive analytics provide a quantitative method to compare and contrast the landscape of mandatory training before and after Secretary Esper's series of memorandums. First, these analytics demonstrate the lack of coordination between commands, in that various entities in the Army and DoD can direct training, yet do not deconflict their orders. Second, as the burden of accessibility remains on the user, he/she must access multiple websites, some requiring different accounts and passwords. Third, training appears to be assigned through the convenience of time- or trigger-based events; training typically takes place every year, upon deployment, or when a soldier changes their duty station. Fourth, the Army does not typically classify types of online training. In order to better understand how to align its priorities, the Army could organize its training into different categories.

### 1. Method for Data Collection

I collected data primarily for mandatory online training courses from requirements found in AR 350-1, the memorandums Secretary Esper released in 2018, a list of training requirements written by the U.S. Army Reserve, and the 1st Cavalry Division's analysis of Secretary Esper's memorandums. Many online courses list the time commitment required for each course in the course description prior to talking the course. For all accessible online courses, I visited each home page to determine if each course was combined access card (CAC) protected (colloquially known in TRADOC as the CAC wall).

Secretary Esper's recent release of memoranda reducing online training requirements immediately resulted in proponents' ceasing to offer previously mandatory

online training courses or placing explanatory statements, such as Figure 3, stating training is "no longer a requirement."[63]

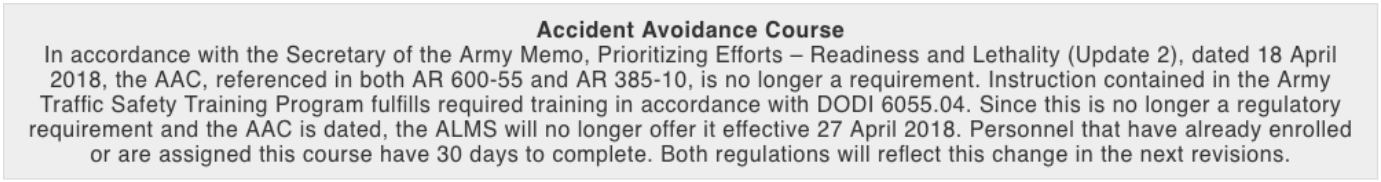


Figure 3. Requirement reduction for the Accident Avoidance Course following release of Secretary Esper's memorandums.[64]

### 2. Assumptions to Fill Data Gaps

Several gaps were identified during data collection. These gaps are organized into constraints, limitations, and assumptions. Constraints are defined as limits to my options to conduct the study. Some online courses are not mandated by time, and the user can work around the intended course design by successively clicking through the training without spending time on each page to comprehend the course material. The metric of time requires further analysis, but I developed a column of actual time required as an estimate of typical time required for a course.

Limitations are defined as my inability to investigate issues within the research bounds. Not all courses published their standards for time within their training overview. Additionally, courses did not consistently identify the proponent for the course, especially for courses on the Joint Knowledge Online (JKO) platform.

Assumptions are research-specific statements that are taken as true in the absence of facts. Time constraints prevented me from taking each course. I applied my own experiences in taking some of the courses multiple times as required for all soldiers, and discussed experiences with fellow peers to develop the actual time required assumption.

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[63] U.S. Army, "Army Accident Avoidance Course," accessed October 1, 2018, https://safety.army.mil/TRAINING-COURSES/Online-Training/Army-Accident-Avoidance-Course.

[64] Source: "Army Accident Avoidance Course."

### 3. Explanations of Type, Frequency, Time, Training Coordinators and Descriptions

I describe the website host's parent organization as the training coordinator. Who originally wrote course material or who controls course information was not always readily apparent when visiting the course website page. I attempted to identify the proponent who controls the course material as the training coordinator. For courses listed under JKO, the training coordinator could not always be determined. For example, while JKO hosts SERE 100.2 training, it is likely that the Joint Personnel Recovery Agency writes and controls the course material.

### 4. Introduction of Descriptive Analytics Tables

I employed descriptive analytics to better understand the following four quantities for mandatory training courses in Table 1. Understanding these quantities provides context for the challenges the Army faces in its distance learning programs.

Table 1. Mandatory training course specific quantities

| |
|---|
| Number of mandatory training courses required by the Army during the pre- and post-Esper eras |
| Amount of time required for mandatory training courses |
| Number of training proponents |
| Frequency of conducting mandatory online training courses |

Additionally, I quantified some of the following qualitative components of mandatory online training in Table 2:

Table 2. Quantitative approach for qualitative components of mandatory training

| |
|---|
| Accessibility of online training courses |
| Types of mandatory online training |

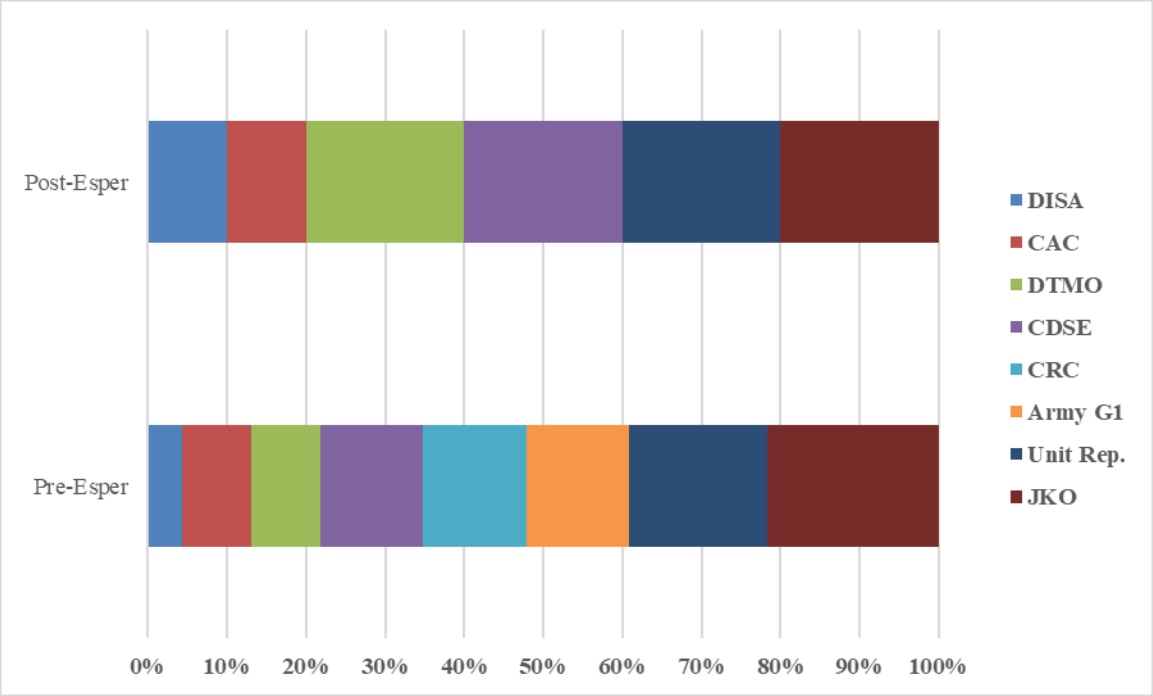
By delving into the challenges these issues pose, I provide four outcomes and corresponding recommendations for dealing with these significant areas within mandatory online training.

## B. MAJOR OUTCOMES FROM DESCRIPTIVE ANALYTICS OF PRE-ESPER REQUIREMENTS AND POST-ESPER REQUIREMENTS

### 1. Lack of Coordination between Commands

One of the greatest challenges for soldiers conducting online training is navigating the number of websites hosted by various organizations providing online training. Out of the 23 required courses during the pre-Esper era, at least eight proponents are represented, and if each unit representative is counted, 12 proponents are represented in Table 3. Without CAC login, to simply access training, each online proponent requires a different login account. Additionally, Army regulations do not account for every proponent's training requirements. For example, neither AR 350-1 nor any other Army regulation requires Government Travel Credit Card (GTCC) training, yet a government credit card is required for permanent change of station or temporary duty (TIDY) travel. The Defense Travel Management Office, the proponent for the Joint Travel Regulation, which DoD service members must adhere to when traveling, requires DoD members to use the GTCC for travel.

Table 3. Proportion of training proponents, pre- vs. post-Esper




Furthermore, in the current climate of change, it is important to recognize that mandatory online training requirements are not only imposed by the Department of the Army. Some of the entities that can dictate additional online training in addition to Department of the Army requirements are Geographic Combatant Commanders, military occupation specialty or branch proponents, unit commanders, and other DoD organizations such as the Defense Travel Management Office. The courses listed are simply minimum requirements, as additional courses are proscribed to soldiers.

One solution to the disparate command problem is to organize mandatory online training under a single location. This would provide advantages to both the student for locating training and the supervisor. In the case of online training, the student is the warfighter, and if the Army continues to advocate for the individual soldier, this recommendation would enable the soldier and his or her supervisor to more easily conduct and track online training.

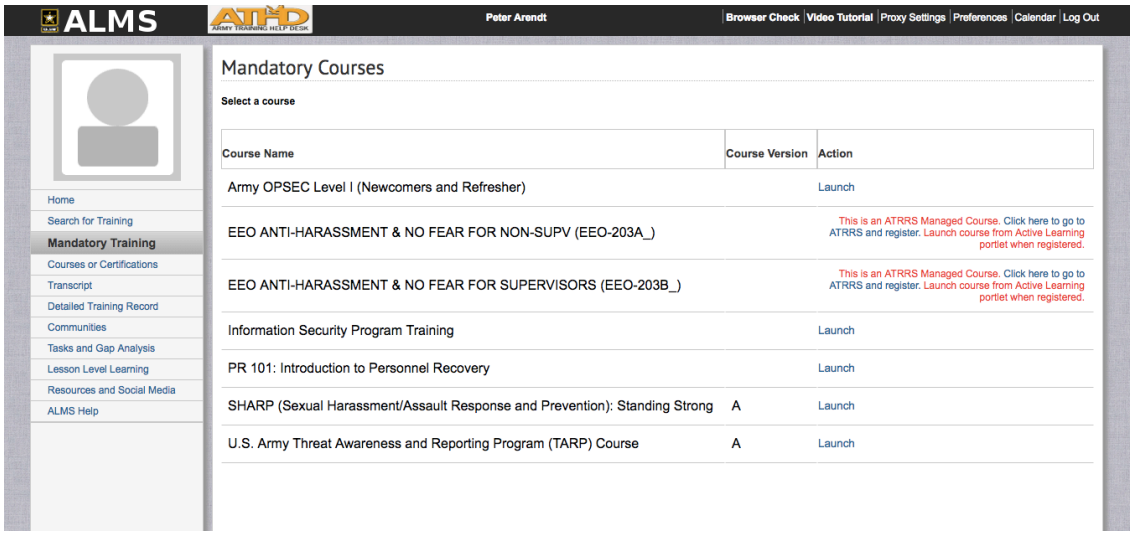



Figure 4. Army Learning Management System website example.[65]

### 2. Accessibility Challenges

Ideally, a user should access a centralized website with a simple interface in order to most efficiently accomplish required training. However, the user must access multiple websites, and in some cases, maintain separate profiles, which are typically hidden behind a CAC wall. One accessibility challenge is illustrated by the complexity of just selecting a course in the Army Learning Management System homepage, as shown in Figure 4. For example, when a student enters the ALMS website for the first time, the website recommends that the user should watch a twelve-minute video to understand how the system interface works.[66] This requirement indicates that the ALMS website is unnecessarily complex for a user to take online training courses. Given Secretary Esper's reduction of unnecessary tasks, Army leadership should also reduce the challenges faced by individual users and supervisors required to track their subordinates.

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[65] Source: Army Learning Management System, "Home," August 23, 2018, https://lms.alms.mil.

[66] Army Learning Management System, "ALMS Help Video - Tutorial," accessed August 23, 2018, https://www.lms.army.mil/StaticContent/ALMS_NewUserTraining/alms_res_portlet.html.

Table 4. CAC wall requirements

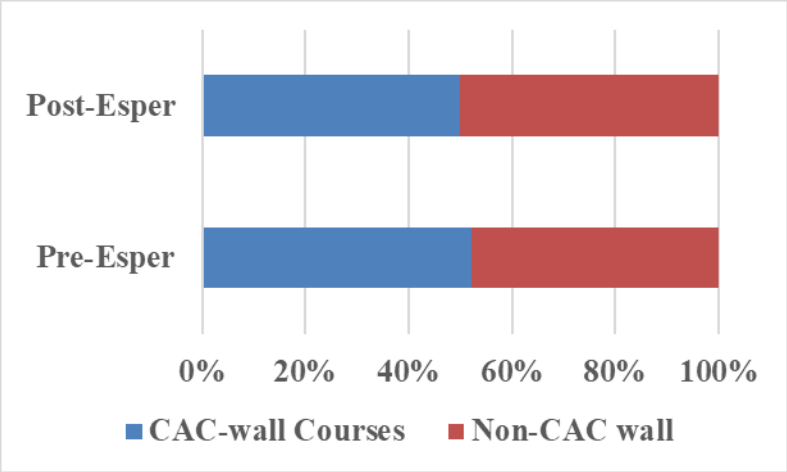



Table 4 illustrates that despite the current TRADOC Commander's (General Townsend) efforts in 2018 to reduce or remove the CAC wall, the challenges of accessibility remain.[67] Unfortunately, the user must bear these challenges. Currently, the CAC requirement for entry to training authenticates the user's identity, but does not offer any other significant advantages. The potential for a consolidated online training host, with CAC access, could provide value, but in its current form, I argue the accessibility challenges outweigh the CAC wall advantage. Could the Army apply intuitive web design for users to access a user-friendly website? Further studies on the cost and reward of developing and maintaining a more intuitive web design are needed to determine the amount of hours users must spend accessing and navigating Army online training course websites.

[67] R. Kenneth Crim, email message to author, February 27, 2018.

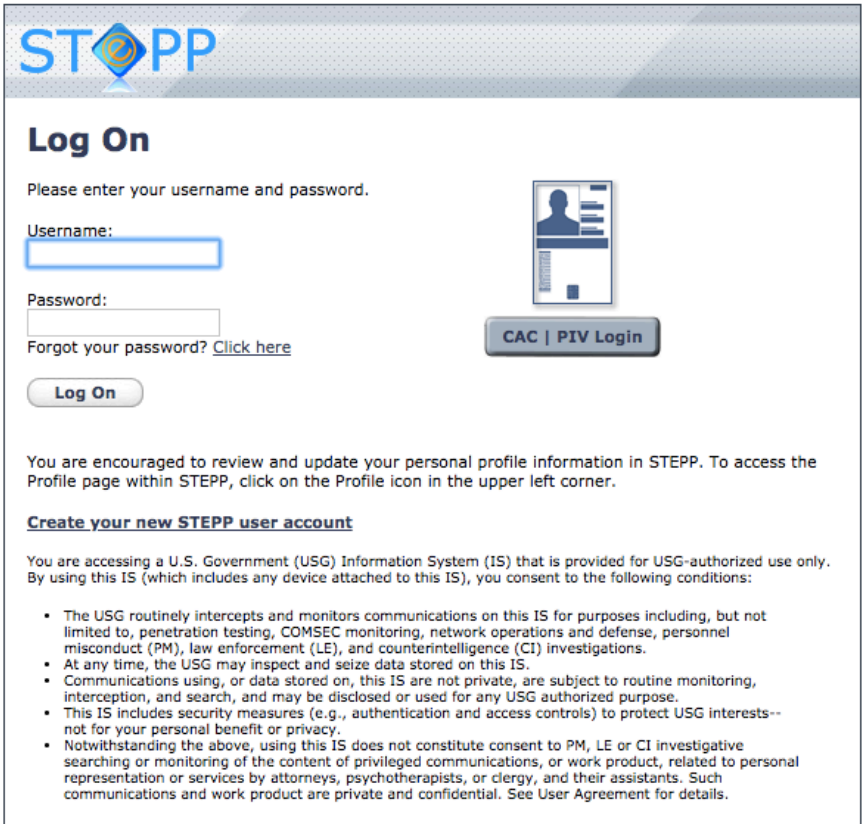



Figure 5. Security Training Education and Professionalization Portal (STEPP) login page.[68]

In another example, all training hosted by Center for Development of Security Excellence (CDSE), such as the current requirement of the foreign disclosure training during the post-Esper era, requires either a new Security Training Education and Professionalization Portal (STEPP) account or CAC login as depicted in Figure 5. One would assume CAC login would be the simpler option, but CAC login requires a time-consuming process to acquire digital certificates solely for the STEPP website.

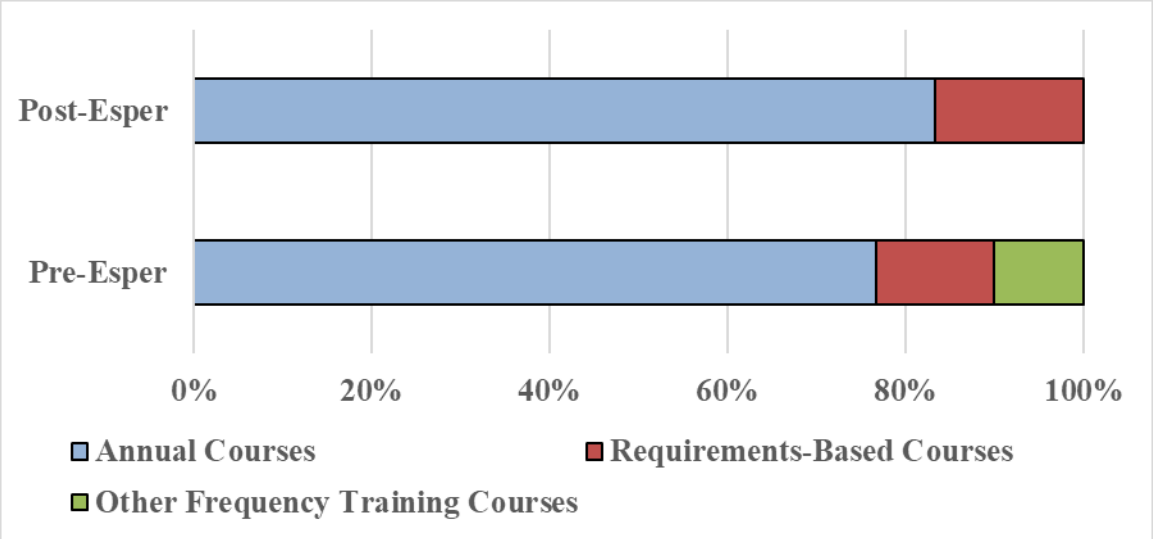
### 3. The Basis of Time and Travel as Triggers for Training

Currently, each of the mandatory training courses in the post-Esper era are triggered, or initiated, by a time or travel requirement as shown in Table 5. For the time

[68] Source: Security Training, Education, and Professionalization Portal, "STEPPv2: Log in to the Site," accessed October 3, 2018, https://cdse.usalearning.gov/login/index.php.

requirement, many of the courses are conducted annually. For travel, when conducting a permanent change of station (PCS) to a new duty station, or traveling on TDY, mandatory online training is required. What analysis has taken place to determine the effectiveness of annual or travel-based frequency? Further research for effectiveness of each course material must be conducted to determine frequency, instead of defaulting to annual or travel requirements.

Table 5. Online training course triggers



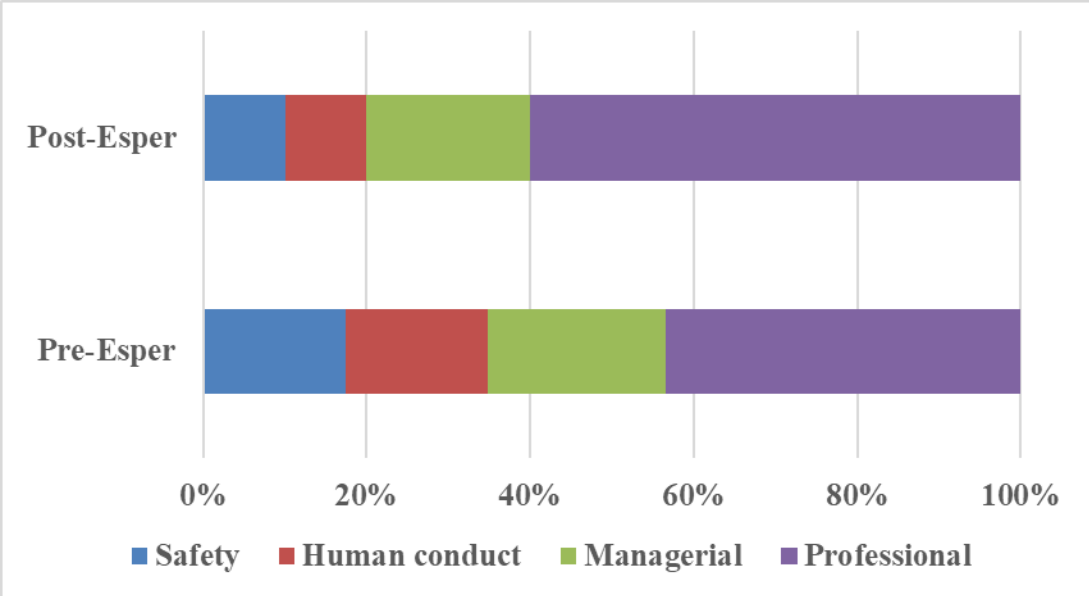

### 4. Objective of Training

I have already examined the objective of mandatory online training and how it addresses challenges an organization seeks to remedy. One method of consolidating and understanding how training changed through the Esper memorandums is to categorize the Army's areas of training. The University of Minnesota Libraries Human Resource Management uses the following taxonomy to describe the type of training for its employees: technical training, quality training, skills training, professional training, team training, and safety training.[69] In this research, I adapted the University of Minnesota's

[69] University of Minnesota, "8.2 Types of Training," accessed October 3, 2018, http://open.lib.umn.edu/humanresourcemanagement/chapter/8-2-types-of-training-2/.

classification to four categories to describe mandatory training in the Army: professional, human conduct, safety, and managerial as depicted in Table 6. Professional training describes the skills, knowledge, or abilities needed to perform the job as a soldier, which includes understanding laws, regulations, and compliance. Human conduct training describes personality traits, behavioral traits, ethics, and human interactions. Safety training prevents accidental or otherwise unintentional activities and behaviors that may be detrimental to mission success, unit cohesion, or people in or out of the military. Managerial training describes how to manage or oversee an organization, personnel, or a domain of knowledge, activity or functions.

Table 6. Proportion of training types, pre- vs. post-Esper




As depicted in Table 6, the proportion of professional training in the post-Esper era has increased versus the pre-Esper era. Additionally, the proportional amount of safety training has decreased in the post-Esper era. Whether these actions are intended or unintended, this indicates that the Army could be recognizing that standardized professional training takes higher precedence for distance learning, while safety training could be relegated to a soldier's supervisor. Yet without further research determining the

effectiveness in mandatory online training for each of these types of training, the intended effects of mandatory online training are speculative.

Various online training courses also apply differing training content methodology; some courses are clearly targeted at a younger audience through a game style of training, as shown in Figure 6, while others apply a less interactive, straight-forward approach. Understanding the effectiveness of current online training course styles and formats is important to evaluate future iterations of the same training. The way educational material is presented for different age groups and occupations clearly impacts the effectiveness of the training. As online training styles have evolved over time, the Army has adapted its online training styles in an attempt to provide more engaging content for the user. While I argue for simplifying the mandatory online training enterprise, it is important to evaluate different styles and formats of online training for different audiences.

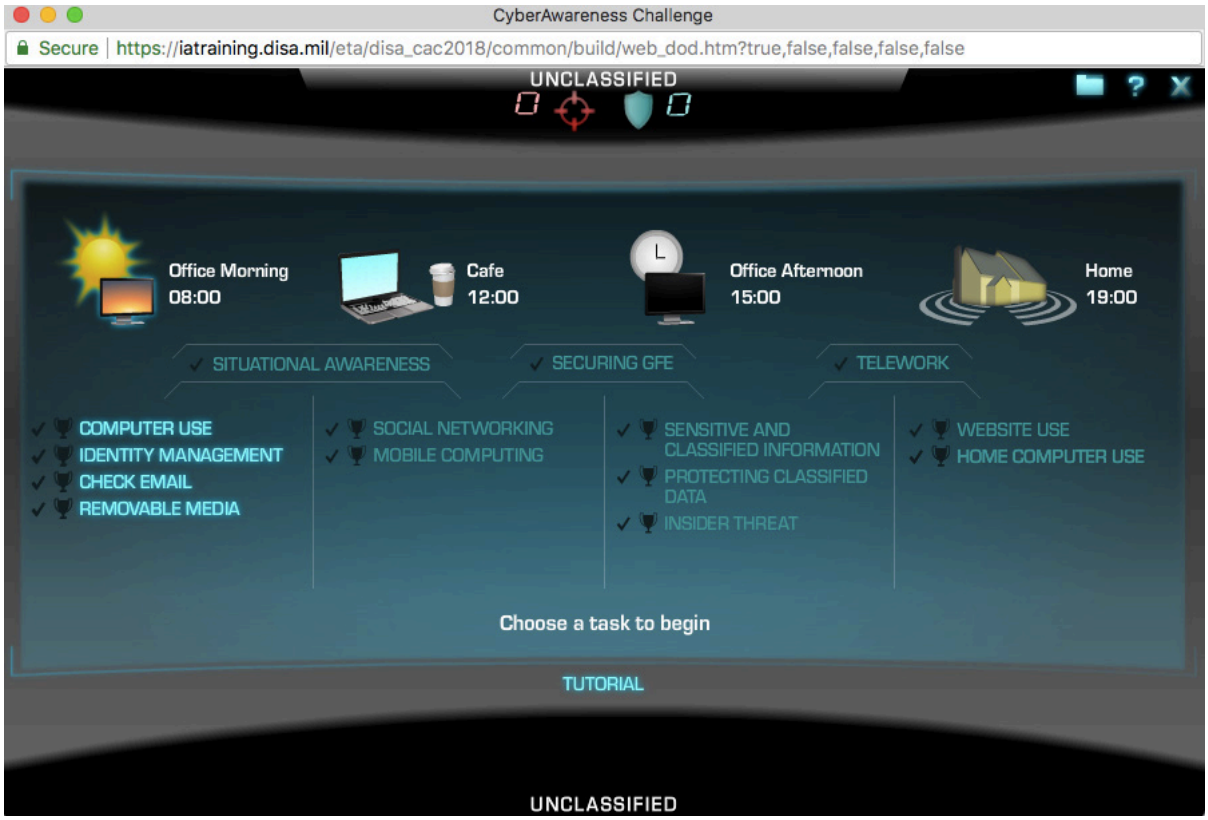



Figure 6. DoD Cyber Awareness Challenge screen capture demonstrating a game style of training content.[70]

## C. CONCLUSION

These four results of descriptive analytics demonstrate how online training in the Army is changing due to Secretary Esper's memorandums and help define how the Army can further transform online training in the future. Significant challenges exist in the current state of mandatory online training which place excessive burden on the warfighter. The Army must recognize that we should ease the burden for the warfighter through making online training more accessible, less complicated between components, determining effectiveness for frequency of training, and properly categorizing training to understand if it is reaching its intended effects. While some of these changes are more

[70] Source: Defense Information Systems Agency, "Army Internet Awareness Training," CyberAwareness Challenge, accessed June 1, 2018, https://iatraining.disa.mil/eta/disa_cac2018.

resource- and time-intensive than others, they must be addressed in order to fully enable Secretary Esper's intent of reducing unnecessary burdens on the warfighter.

The Army distributed learning system is understandably tailored to the Army's unique situation as a warfighting organization working under the umbrella of the Department of Defense. However, one cannot argue that due to the Army's exceptional position, mandatory online training should continue to operate in a dysfunctional manner. Understanding how a different organization with similar challenges as the Army approaches mandatory online training provides a new vantage point for the Army to make changes to improve online training. Conducting a case study of a publicly traded corporation is one way of developing a greater understanding of how a different organization applies online training.

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# IV. CASE STUDY OF MANDATORY TRAINING IN A CORPORATION

## A. INTRODUCTION

One method of analyzing how to increase effectiveness of mandatory online training in the Army is to understand how publicly traded corporations apply online training. As with the Army, mandatory compliance in legal and ethical issues are necessary for employees in today's corporations. Employees' failure to adhere to legal and ethical norms places these corporations in a position which compromises a corporation's ability to operate in a free market. Understanding the importance of risk mitigation for a corporate environment led me to research the parallels between risk mitigation in the Army versus corporations through a plausibility probe case study.[71] George and Bennett define plausibility probe case studies as "preliminary studies on relatively untested theories and hypotheses to determine whether more intensive and laborious testing is warranted."[72] For the case study, I selected Zillow Group, a publicly traded company based in Seattle, Washington with over 3,000 employees with an annual revenue of $965 million USD, and employees spread across more than 10 geographic locations.[73] As a corporation, "Zillow Group houses a portfolio of the largest and most vibrant real estate and home-related brands on the web and mobile."[74] Zillow Group served as a suitable case study for mandatory online training in the Army because of its status as a publicly traded company, meaning it receives pressure from shareholders to operate within legal, ethical, and cultural norms; maintains operations in various countries around the world; and assumes risk by adopting innovative technology over its competitors.

I interviewed members of Zillow Group's Learning and Development department responsible for the development and implementation of all training for new employees,

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71 George and Bennett, *Case Studies and Theory Development in the Social Sciences*, 75.

72 George and Bennett, 75.

73 Fortune, "Zillow Group," accessed October 6, 2018, http://fortune.com/future-50/zillow-group/.

74 Zillow Group, "About," accessed October 6, 2018, https://www.zillowgroup.com/about-zillow-group/.

legal and ethical compliance, and other educational training. We discussed the methodology of training employees during initial entry and ongoing education, as well as frequency of ongoing education. Additionally, we discussed how Zillow Group measures its effectiveness in online training and how online training evolved in the company.

## B. COMPARING AND CONTRASTING ZILLOW GROUP AND THE ARMY

Prior to discussing the most significant outcomes of the case study, I examine the similarities which make Zillow Group a suitable choice for a case study. While Zillow is not the only organization that shares these similarities with the Army, Zillow employee's candor to discuss their company's procedures provided a refreshing perspective. Zillow Group employs personnel in geographically diverse locations across several different countries. Many of their employees specialize in various functions ranging from real estate, web development and marketing. Zillow Group, similar to the Army, receives pressure to operate and manage risk within established norms from external entities through its shareholders. In comparison, the Army faces this pressure from the American public through the institution of Congress. For Zillow Group, mitigating risk means survival in the competitive world of business. While the stakes may not be as high for Zillow employees as those in the Army, Zillow will become unprofitable if it does not manage risk for employees.

The greatest outcome of the case study demonstrated how employees in Zillow Group viewed themselves and their fellow employees. When interviewed, one Zillow Group employee said that, from her perspective as an employee with less than one year of employment at Zillow Group, "Zillow treats their employees like adults."[75] The employee's supervisor agreed, stating that Zillow Group has one online mandatory training course for employees upon entry, a five-minute class about time keeping practices for pay purposes required by the Department of Labor. Annually, Zillow Group requires employees to take only two online training courses as part of compliance training for employees, consisting of anti-harassment and security awareness. These mandatory

[75] On May 16, 2018, I spoke with Zillow Group employees from the Zillow Group Learning and Development department regarding how Zillow Group conducts mandatory online training.

training classes are part of Zillow Group's adherence to Service Organization Control (SOC) requirements as part of American Institute of Certified Public Accountants Statement (AIPCA) on Standards for Attestation Engagements (SSAE) No. 16, Reporting on Controls at a Service Organization.[76] Zillow highly encourages their senior managers to advocate for specific training courses to employees, as opposed to requiring greater than two mandatory online training courses· In addition to online training courses, Zillow Group provides employees access to LinkedIn Learning and Lynda.com, which hosts "over 12,000 expert-led, online courses and video tutorials" in business, technology and creative topics.[77] Despite the lack of mandate for many of Zillow's online training course, Zillow holds their employees responsible for understanding and complying with company policy.

As Zillow Group grew in size and worth, it moved from its initial high tolerance for risk as a start-up business to a more risk adverse position over time. As a result of this initial high tolerance for risk, in order to remain compliant, Zillow Group purchased a commercially available, company non-specific training class about security awareness. This caused an uproar among Zillow Group employees about training quality and content, as the majority of employees considered the one-hour course on security awareness a waste of time. Based on employee input, the Zillow Group Learning and Development department then developed their own security awareness class, which employees responded to in a more favorable manner. For their current version of security awareness online training, Zillow Group sought to build a Zillow Group employee-specific course with new technology through a company that specializes in developing online content, and this course was developed outside of Zillow Group in consultation with an online content development group. For this course, the developers ensured that the content changes periodically, as the Zillow Group Learning and Development team stated "the whole point of [security awareness] training is to educate people on new skills." Furthermore, the Zillow Group Learning and Development team spends a significant amount of time

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[76] American Institute of Certified Public Accountants, Inc., "Pre-Clarity Statements on Standards for Attestation Engagements," accessed November 28, 2018, https://www.aicpa.org/research/standards/auditattest/preclarity-ssae.html.

[77] LinkedIn Learning, "Introducing LinkedIn Learning, Personalized ELearning for Your Organization," accessed October 8, 2018, https://learning.linkedin.com/content-library.

determining the most suitable medium for specific training content between live, blended (live and online), and online training.

When mandatory training is conducted, either live, blended or online, Zillow will pay employees for six to eight hours of work, and employees are discouraged from taking online training outside of work hours, as Zillow's corporate culture discourages employees from responding to work emails or conducting work activities outside of work hours. The Learning and Development team stated that employees were generally receptive of optional courses as minimal required training exists. For example, a popular course among Zillow Group employees is about interviewing. This typically goes against common sense as interviewing for jobs is counter to retaining employees. However, Zillow encourages these types of classes because it develops their professional work force and employees appreciate it, thereby increasing retention as employees are professionally developing themselves. Zillow also prioritizes training according to different employee needs. For example, new employees may not receive annual compliance training immediately as Zillow assumes risk for new employees so they can receive other types of training first.

## C. RECOMMENDATIONS FOR THE U.S. ARMY FROM A CORPORATE PERSPECTIVE

While differences exist between the Army and Zillow Group's approach to instituting mandatory online training, the Army could implement some of the techniques employed by Zillow Group to enhance the effectiveness of its online training. First, the lack of mandatory online training in Zillow Group is remarkable. As discussed during the interview, one Zillow employee remarked that, "Zillow treats its employees like adults." While Zillow is a relatively young organization compared to the Army, the approach of encouraged versus mandatory training stands out as the primary difference between the two organizations. The greatest obstacle in implementing this minimalist style in the Army is the vast number of rules and bureaucratic procedures in the military as a government organization. However, instead of dealing with the symptoms of a large bureaucracy, a more effective method is to treat the sickness of too many requirements. Fortunately, I believe Secretary Mattis and Secretary Esper are taking the appropriate measures to determine what unnecessary tasks can be removed.

The second recommendation the Army could integrate using the corporate world as a model is to incorporate greater feedback from its soldiers. Minimal procedures and systems exist for soldiers to provide immediate or ongoing feedback for online training, despite examples of soldiers of all ranks providing innovative solutions that have dramatically reduced bureaucratic procedures or saved lives in combat. Allowing ongoing feedback for existing online training courses could greatly improve future iterations of online training.

The third recommendation is to develop a model for online training that incorporates new training material to avoid repetitive annual training. Course variations, such as different storylines or variations of course material, which encourage active participation instead of clicking through the courses, could increase interest and teaching material retention. Providing funding for course updates is critical for future course development as existing courses are updated in the future. The Army should transition its concerns about cheating in mandatory online training towards developing more engaging course content.

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# V. RECOMMENDATIONS AND CONCLUSION

## A. PURPOSE

The U.S. Army needs to reconsider the application of mandatory online training, and this is an appropriate time to do so. First, Secretary Mattis' initiative to reduce unnecessary tasks is a great first step. Second, Secretary Esper's responsiveness to Secretary Mattis' call, in the reduction of Army tasks, is an excellent response. Determining the appropriate frequency, effectiveness, and mediums of mandatory training will prevent oscillation between too many tasks or training courses and too little guidance or oversight and maintain the Army's trajectory towards the plateau of productivity.

## B. RAMIFICATIONS OF REMOVING MANDATORY ONLINE TRAINING

While discussing my research with my peers and fellow service members, most concur that the Army's application of mandatory online training requires extensive changes. Some have advocated for complete removal of online training and replacement with in-person training. Removing online training altogether could be compared to the proverbial throwing the baby out with the bathwater. Online training, while in need of reform, serves an important role when applied correctly through its intended purpose of a rational, inexpensive method of instruction. Mandatory online training should be a low-cost yet effective means of distributing important training across the force.

While in-person training has some advantages over online training, there are also drawbacks to both. Army training regulations require forecasting training schedules six weeks beyond the current date.[78] In-person training requires scheduling flexibility for multiple units (typically detachment-, platoon- or company-level) to ensure all service members from all units can attend training. In-person training requires a qualified instructor, as the instructor must teach effectively in order to gain benefit over the current state of online training. My analysis of the Gartner Hype Cycle demonstrates how the drivers of bureaucratic inertia and contrition are exacerbating the pendulum swings of

[78] Department of the Army, *Army Training and Leader Development. AR 350-1.*

online training.[79] By evaluating frequency and effectiveness of training, we can optimize online training for the Army.

## C. SHORT-TERM REMEDIES TO IMPROVE MANDATORY ONLINE TRAINING

I concur with General Townsend, the TRADOC Commander, in that all mandatory online training courses should have a test-out option at the beginning of the course.[80] Second, until there is an effective singular online platform hosting a repository for completed online training, the CAC wall should be removed to ease access of unclassified online training. I question the value of maintaining a CAC-wall for training, as CAC sign-in limits accessibility and creates an unnecessary technological hurdle for soldiers trying to access training.

## D. LONG-TERM SOLUTIONS TO IMPROVE MANDATORY ONLINE TRAINING

First, I advocate for a high-level, thorough analysis as a commissioned study or the development of a special task force which answers to the Secretary of the Army to determine the effectiveness of mandatory online training in its course material and frequency. Until the Army truly understands the effectiveness of its mandatory online training and can prove that instruction changes individual and organizational behavior, the pendulum of too much or too little mandatory online training will continue to swing.

Second, the burden of online training should transition from the user to the administrator, to become more user-friendly. In the analogy of joint doctrine in the form of a command relationship, the online training user should be the supported element, with proponents and hosts as the supporting elements. In the Army, commanders have a staff to assist them in making timely decisions. In the same way, as the burden of administrative tasks are lifted from the back of the warfighter, the platform of mandatory online training must become streamlined to ease the issues of accessibility.

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[79] Gartner, "Hype Cycle Research Methodology."

[80] Crim, email message to author, February 27, 2018.

## E. OPPORTUNITIES FOR FURTHER RESEARCH

Throughout this thesis, I advised additional research on the effectiveness of mandatory online training. The intent of this thesis is to direct further study on the effectiveness of each online training course and provide immediate recommendations to streamline or shorten courses without sacrificing the quality of the training. Future topics include:

- Organizational transformation to evaluate effectiveness of Army training,
- Analysis of online training from an ethics perspective,
- Determining the actual cost of online training in terms of both time and money,
- Development of a singular web platform to host online training,
- Determining if providing different styles of mandatory training for different ranks or ages of soldiers is effective.

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# APPENDIX A. GLOSSARY

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|---|---|
| Air Force Instructions | Either a manual of U.S. Air Force guidance or a doctrinal standing order within the Air Force. |
| Blended training | A combination of online training and in-person instruction. |
| Host | A website that provides a cyber locale for providing online or mandatory online training. |
| Mandatory online training | In the Army, online training that all soldiers must complete regardless of rank or position. |
| Online training | Also known as computer-based training (CBT), distance learning, or e-learning, online training is a form of instruction that takes place completely on the Internet. It involves a variety of multimedia elements, including graphics, audio, video, and web-links, which all can be accessed through one's Internet browser. These elements are used in lieu of traditional classroom components.[81] |
| Proponent | A department or office responsible for developing, providing and maintaining online or mandatory online training to a host. |

[81] Safety Unlimited, Inc., "What Is Online Training," accessed November 26, 2018, https://www.safetyunlimited.com/Online-Training/What-is-Online-Training.asp.

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# APPENDIX B. INTERVIEW QUESTIONS

The author submitted the following interview questions approved by the Naval Postgraduate School Institutional Review Board to Zillow Group's Learning and Development department and soldiers in the U.S. Army about their experiences with online training.

1. What is your company's process to manage risk of employees conducting immoral or illegal activities? How are employees educated?

2. Does your company use online-based, or blended (mix of online and in-person) training to mitigate risk? If so, what topics are covered in your online training?

3. What is the style and method of delivery for online training for your employees?

4. Can employees choose the method of receiving mandatory training to suit their time constraints or desired style of learning?

5. How does your company measure the effectiveness of online training? What measures of performance are analyzed?

6. How has online training evolved during the tenure of the company? How does your company's online training advancement compare to the pace of technological and educational advances?

7. What are the opportunity costs involved with online training in your company?

8. Do your employees conduct online training during unpaid hours, because they are expected to complete the training in addition to their assigned duties?

9. Does the company utilize mobile-based online training platforms?

10. How frequently does the company require mandatory training in the areas of sexual harassment and equal opportunity, and what are the mediums in which these topics are presented to employees?

11. When dealing with employees who don't comply with training, or even commit an infraction of the company policies, what are the consequences for the other employees? Is more training required for employees who have already complied with your company's policies?

# SUPPLEMENTAL

This supplemental is a Microsoft Excel file containing descriptive analytics of mandatory online training. This data describes the number or mandatory training courses, the host and proponent of these courses, and where they can be located.

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