Plain Language Study of U.S. Army Human Resources Information

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ABSTRACT

This plain language study explored whether the average soldier could read and comprehend the Army's human resources information and whether the average grade level completed for soldiers was the same as the average reading grade level of human resources documents. A random sampling of 250 Army human resources documents were scored for reading ease and grade level using the Flesch-Kincaid reading ease tool. The average educational attainment of soldiers, based on Department of Defense data, established a target grade level score of equal to or less than nine and a reading ease score of equal to or above 60. The results of a one-sample t-test indicate that there is a statistically significant difference between the mean reading ease score of 23.8 for the Army' human resources information and the mean reading ability of 60 for soldiers. The results of an additional one-sample t-test for grade level also indicate that there is a statistically significance difference between the reading grade level score of nine for soldiers and the average reading grade level of 14 for the Army's human resources information. The mean reading ease score of the Army's human resources information would have to be almost 40 points higher on the Flesch-Kincaid reading ease scale and four to five grade levels lower to be easily understood by the average soldier. Utilizing transfer theory, which is grounded in the theory of pragmatism and calls for academics to share practical, real-world solutions with practioners, this study proposes the implementation of a Plain Language Checklist. This checklist could help the Army develop clearer, easier to understand information. Plain language human resources information would benefit the careers of individual soldiers who need to be able to understand and act on benefits, promotion, training, and education opportunities while saving HRC resources in terms of employees time and enhancing the Army's talent management initiatives and overall recruiting and retention goals.

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Index of Acronyms

Abbreviation	Explanation
ALARACT	All Army Activity Message
DoD	Department of Defense
HRC	U.S. Army Human Resources Command
MILPER	Military Personnel Message
MOS	Military Occupational Specialty
NCO	Noncommissioned Officer

Chapter I

INTRODUCTION

More than one million active duty and reserve soldiers rely on the Army Human Resources Command, or HRC, for key information about benefits, assignments, promotions, training, and education opportunities. This study focused on the readability of the Army's human resources information compared to soldiers' education levels and reading ability. The career information HRC shares is complex and time-sensitive. It usually requires soldiers to act. Soldiers can only take advantage of opportunities if they understand the human resources messages the Army shares.

Statement of the Problem

While the Army is required to follow plain language guidelines, the clarity of HRC information has not been measured. The Army publishes all of its human resources information online, yet HRC communicators and career managers receive daily messages from enlisted soldiers and officers seeking explanations. The majority of the inquiries are about human resources guidance, indicating that published content is not plain language or easily understood by soldiers (B. Hamilton, personal communication, October 8, 2018).

To help soldiers make informed career decisions, the Army must ensure messages match the reading abilities and average education levels of the target audience. Without access to clear, plain language content, soldiers are not be able to take advantage of all the career opportunities the Army has to offer. Content must also be engaging, graphically appealing, and concise to cut through the information overload of digital and social media (Center for Plain Language, 2018).

Urgency of the Problem

The disconnect between the readability of information and the average education level of soldiers is substantial. In a military-funded study of readability formulas, Kern (1980) set the target reading level at seventh grade. This was based on a study by Mathews, Valentine, and Selman (1978) which found 30% of recruits read below a seventh-grade level. Kern (1980) found some documents were beyond the reading level of at least 80% of the target audience. The Army is notorious for filling communication with jargon and acronyms (Saber, 2018). Numerous authors have found that military training and technical materials are often written well above the reading ability of personnel (Ford, 2015; Gieseman, 2015). When Steinberg and Leaman (1988) surveyed more than 4,000 non-commissioned officers (NCOs), who are responsible for leading and training enlisted soldiers, the officers described communications and reading skills as vital (Gagne, 1988). Yet, when Harmon (1989) tested the reading ability of NCOs, the majority did not meet the Army's reading level requirements.

A lack of plain language guidance is problematic, both in terms of soldiers' career advancement and Army efforts to recruit and retain qualified personnel. Clearly articulating benefits is key to attracting and retaining a skilled workforce (Stone, Deadrick, Lukaszewski & Johnson, 2015). The Army seeks to grow from 470,000 to 500,000 active duty soldiers by 2024 through a combination of recruiting and retention. Yet a new blended retirement system gives soldiers the option of retiring early to pursue opportunities in the private sector without losing their entire pension.

The Army devotes vast resources to talent management. In the words of the Assistant Secretary of the Army for Manpower & Reserve Affairs, the Army utilizes soldiers to their full potential by placing the right person in the right job at the right time (Evans, 2018). While the

Army continuously creates systems and programs to enhance talent management, it buries career, training, and educational announcement opportunities in wordy Military Personnel Messages (MILPERs) and All Army Activity Messages (ALARACTs) filled with jargon and acronyms. In this study MILPERs and ALARACTs will be referred to as human resources documents.

One example of this inattention to plain language comes from a human resources document with updates to Basic Allowance for Housing (BAH) requirements. In June 2013, the Army began requiring supporting documents for all soldiers receiving additional BAH pay for dependents. Three years after the policy began, nearly 45% of soldiers still had not updated their personnel records. In January 2018, a human resources document was released informing soldiers that, unless they updated their records, they would see a decrease in pay (Human Resources Command, 2018). The Army's efforts to communicate the changes to benefits were well intentioned, but the document lacked readability in terms of established plain language best practices as defined by the Center for Plain Language (2018) and communication scholars (Dubay, 2004). The entire document was written in all capital letters, hiding acronyms. There was no white space, and the document did not contain bulleted lists, bold fonts, or underlining to highlight the most important information.

The guidance focused on the process of updating personnel information from the organization's perspective rather than providing concise, actionable guidance for its intended audience. The actual instructions soldiers needed to follow to update personnel documents were buried in the second page of the document. The guidance was at least written in active rather than passive voice:

> 3.B.1. THE SOLDIER WILL PROVIDE ANY IDENTIFIED MISSING DOCUMENTS TO THEIR SUPPORTING HUMAN RESOURCE (HR) SPECIALIST FOR IMMEDIATE UPLOADING TO IPERMS. IF THE SOLDIER DOES NOT HAVE A CURRENT DA

> FORM 5960 IN IPERMS, THE SOLDIER WILL CERTIFY THEIR BAH BY COMPLETING A DA FORM 5960. IT WILL BE SIGNED BY THE SOLDIER AND CERTIFIED BY THE COMPANY LEVEL COMMANDER. COMMANDERS MAY DELEGATE IN WRITING, THIS CERTIFICATION TO THE FIRST COMMISSIONED OFFICER IN THE SOLDIER'S CHAIN OF COMMAND. (Human Resources Command, 2018)

On the Flesch-Kincaid readability test, the document scored a 17.3, meaning it was very difficult to read and written at a college level. The grade level score for the document was 15.6, almost three grade levels above the average education level completed by enlisted soldiers. Ranking the human resources document only two grade levels higher than its target audience's reading ability may be generous in terms of a readability score. Plain language researchers agree that grade level completed does not translate into actual reading ability. An average high school graduate reads at a ninth-grade level, meaning a large number read below that (Dubay, 2004). This one example, from the hundreds of Army human resource documents published each year, is likely written above the grade level of 80% of soldiers who hold a high school degree or some college (PEW, 2011).

This lack of plain language guidance undermines the Army's talent management goal to develop a skilled, mobile workforce since soldiers may not be able to access the information to take advantage of career opportunities. The problem is compounded by training and technical guidance, which is written above the average reading level of soldiers, hindering them from performing at their full potential as they move up in rank or into new positions. Ford (2015) writes that while the Army recognizes communication skills as central to a leader's ability to influence, the importance of communication has been neglected through all levels of the Army officer education system. The lack of focus on producing plain language content, particularly easy-to-understand human resources guidance for soldiers, is becoming an increasingly urgent problem for

the Army. The ease of accessing documents online has pressured government organizations to create effective, plain language content for broad audiences (Matveeva, 2017).

With an increased emphasis on recruitment and retention and a new, more flexible retirement system, this is a crucial time for the Army to focus on clear communication, particularly in human resources. Burying career and educational opportunities in confusing documents does a disservice to the Army and to soldiers. Not clearly articulating the benefits of switching to more lucrative military occupation specialties, explaining how to obtain trade certifications, or access tuition assistance means the Army is missing a valuable chance to convince soldiers to enlist in and then remain in the military.

Barriers to Implementing Plain Language

Education levels have been on the rise in the military, yet only 18% of Active Duty Soldiers have a bachelor's or advanced degree (Department of Defense, 2016). Furthermore, while Army content is not specifically scored in the annual Federal Report Card, the Department of Defense overall received a B for writing quality in 2018 (Center for Plain Language, 2018). This score indicates that information written for soldiers may not be as clear or easy to understand as the Army intends. The Army needs to develop plain language content, written at a high school level, to reach its target audiences.

Like other government agencies, HRC faces barriers to creating readable content. Although plain language is required by law, the Center for Plain Language (2018) cites factors such as personnel turnover contributing to scores decreasing from 2017 to 2018. When people move in and out of communication positions, scores tend to drop in both organizational compliance and writing quality. Another factor may be the way federal plain language guidance has been implemented. The Department of Defense (DoD) is graded on compliance with the Plain Writing Act, but

guidance is diluted down to the Services and even more so down to the various Army commands such as HRC. Plain language policy memos, guidelines, best practices, and training are all written at the department level and aren't localized for individual organizational messaging goals or audiences (B. Hamilton, personal communication, October 8, 2018). The greatest barrier to increasing readability appears to be a lack of tailored implementation, training, and resources.

Pragmatism as a Conceptual Framework for the Study

Reaching consumers with clear content requires academics willing to research and produce plain language guidance that government agencies can actually use. Yet, as numerous authors have highlighted, there are issues with the knowledge production and sharing process between academics and practioners (Vogel, 2010). The consensus is that since academic research often does not reach practioners, a simpler approach to bridge the divide is needed (Rynes, Giluk & Brown 2007). The creation of practical plain language research can be viewed through the lens of pragmatism: a community which seeks to solve problems through scientific inquiry. The theory attempts to reconcile rationalism and empiricism by demonstrating that knowing and doing are part of the same process (Van de Ven, 2007). Peirce (1905) thought beliefs commit us to action and urged academics to clarify their ideas. Others viewed pragmatism as a tool to improve society (Addams, 1930; Dewey, 1905; James, 1907). While pragmatists focus on different details, they all relate theory to practice, focus on the community of inquiry, and encourage clarifying ideas to enable real-world action (Shield, 2003).

In order to put pragmatism into action, a communication medium is needed to share plain language research. Van de Ven and Johnson (2006) provide a solution to the knowledge sharing problem through engaged scholarship: academics and practioners working together to produce knowledge. Vogel (2010) built upon engaged scholarship theory to propose transfer theory, a

solution to the knowledge sharing problem which is grounded in pragmatism. Research is translated by academics and then disseminated to practioners to use. Rather than focusing on academic and professional collaboration during the knowledge production process, Vogel focuses on building better communication channels between academics and practioners. Academics should research real-world problems and share practical, solution-oriented findings with practioners. The objective of the plain language movement is to improve the clarity of government communications, which is why this study will focus on pragmatism and knowledge transfer to improve the Army's communications with soldiers.

Purpose of the Study

Studies have shown that readers strongly prefer plain language to "legalese" and "officialese." They understand plain language information better and faster, are more likely to read it in the first place, and are more likely to comply with the message (Kimble, 2016). Like all government agencies, the Army is mandated to follow the Plain Writing Act of 2010, which directed agencies to "use clear government communication that the public can understand and use." In particular, any documents necessary for obtaining a benefit or service, or complying with a requirement that the federal government administers or enforces, should be written in plain language (Center for Plain Language, 2018). Almost all of the information the Army shares through HRC is focused on steps to obtain a benefit or service, or comply with an Army regulation. Sharing complex information using plain language principles is important because it helps ensure that content matches the reading abilities of the target audience.

HRC's audience consists of active duty and reserve soldiers who should be able to read at a high school or early college level, based on average educational attainment. Education levels have been on the rise in the military. Close to 80% of active duty soldiers and 77% of national guard

and reserve soldiers have a high school diploma or some college. Yet, only 18% of Active Duty Soldiers have a bachelor's degree or advanced degree (Department of Defense, 2016). Numerous literacy studies have also shown that grade level attained does not necessarily translate into being able to read and comprehend information written at that grade level (Dubay 2004; Johnson & Weiss, 2008).

Federal agencies have made progress toward plain language, but there is still room for improvement. A report card issued by the Center for Plain Language gave the Department of Defense (DoD) a C in writing and information design in 2015 and a B in writing quality in 2018 (Center for Plain Language, 2018). The Center for Plain Language did not issue a separate report card for the Army and it is very unlikely that internal human resources guidance was assessed to generate plain language scores. Currently it is unclear whether the Army is sharing human resources information at a reading level which matches the education level of soldiers. This study compared plain language scores of HRC information based on the Flesch-Kincaid readability test with the average education levels of soldiers and their projected reading ability.

Research Questions and Hypothesis

This study was designed to investigate and answer two related research questions:

1. Can the average soldier read and comprehend the Army's human resources information?

2. Is a soldier's estimated reading grade level (based on actual grade level completed) the same as the average Flesch-Kincaid reading grade level of the Army's human resources information?

$H1_0$ There is no statistically significant difference between the mean Flesch-Kincaid reading ease score of the Army's human resources information and the mean reading ability of soldiers.

$H1_a$ There is a statistically significant difference between the mean Flesch-Kincaid reading ease score of the Army's human resources information and the mean reading ability of soldiers.

$H2_0$ There is no statistically significant difference between a soldier's estimated reading grade level (based on his actual grade level completed) and average Flesch-Kincaid reading grade level of the Army's human resources information.

$H2_a$ There is a statistically significant difference between a soldier's estimated reading grade level (based on his actual grade level completed) and average Flesch-Kincaid reading grade level of the Army's human resources information.

Through an exploration of these research questions and hypotheses this study was designed to establish Flesch-Kincaid readability and grade level baseline scores for Army human resources content and to develop a user-friendly plain language tool for HRC staff to use. The tool, a checklist based on a process map will be used to assess and improve the readability of HRC's communication products. The process map will include instructions on how to use the Flesch-Kincaid readability formula in Microsoft Word and a plain language checklist, based on DoD guidelines, to analyze written content. Depending on the grade level and readability scores generated, the checklist will include recommendations on how to rewrite content to improve clarity. The plain language checklist will be designed to provide communicators a process to make improvements to content prior to publishing to web or social media.

Definition of Terms

In this paper, the term Human Resources Command, or HRC, refers to the U.S. Army command which actively manages soldier's careers from basic training through retirement and beyond. Soldier are HRC's target audience of active duty and reserve soldiers. Plain language

guidelines refer to requirements set forth in the Plain Writing Act of 2010 which required all federal agencies to utilize clear communication. Grade level and reading ease scores are generated by the Flesch-Kincaid readability test which predicts ability to comprehend a selection of text based on reading and grade level. Web content is information published on the hrc.army.mil Web page and social media content are messages shared on the HRC Facebook and Twitter pages.

Procedures

The first step in deciding which HRC content should be analyzed for plain language was determining which information soldiers are most likely to seek from HRC. The actual human resources and career related guidance HRC produces will be collected, randomly selected, and analyzed to generate plain language scores. Content from 2012 to 2016 was analyzed. Plain language scores were calculated using the Flesch-Kincaid readability test which uses formulas to give objective scores on writing and can quantify the grade level at which a document is written (Model Systems Knowledge Translation Center, 2014). These scores were then compared to the target average reading ability of soldiers.

Significance of the Study

Conducting a plain language study of HRC information is both relevant and timely. While the DoD maintains a robust website of plain language resources, there is little research regarding the Army's progress toward communicating clearly (Department of Defense, 2019). The majority of plain language research in the military actually occurred before the Plain Writing Act was enacted (Harmon, 1989; Hegerfeld, 1997). The Army is not alone in a lack of research. All federal agencies are mandated to follow the Plain Writing Act, but the majority of writing on the topic has focused on public health (Walsh & Volsko, 2008). As for the topic area of this study–Army human resources information and plain language–no previous studies appear to exist.

Analyzing the effectiveness of HRC's communication efforts is timely because the Army is transitioning from an all-or-nothing retirement system to a blended retirement system. The new retirement system increases the importance of HRC's communication efforts because soldiers unhappy with their career trajectory or future earnings now have the option of drawing a partial pension without committing to 20 years in the military. Clearly communicating benefit and career opportunities is also key to the Army's efforts to increase to 500,000 active duty soldiers by 2024. In 2018, for the first time since 2003, the Army missed its recruiting goal, falling 6,500 soldiers short, despite spending an extra $200 million on bonuses and approving additional recruiting waivers (Voice of America, 2018). The new retirement flexibility for soldiers, coupled with the Army's recruiting and retention goals, increases the significance of HRC's communication efforts.

Limitations of the Study

A study of HRC content fills a gap in the literature for both Army and human resources information related to plain language. The major limitation of the study is the instrumentation used to calculate plain language scores. The Flesch-Kincaid reading test is a well-established method to calculate grade level and reading ease but it is not as effective as in-person usability testing to determine if content is easily understood. The Flesch-Kincaid test does not consider other elements of plain language, including document design, white space, headings, lists, tables and charts, active or passive voice, and use of words familiar to the audience (Kimble, 1999, 2016). The Center for Plain Language (2018) recommends using focus groups to test usability. Asking readers to paraphrase written content or find specific information on a website or in a document helps researchers determine if messages are being interpreted as intended (Barnum, 2011; Rubin & Chisnell, 2008). Future inquiry could expand upon the study by incorporating usability testing with focus groups to analyze HRC content.

Organization of the Study

The remainder of this dissertation was divided into four chapters. Chapter 2 focuses on a review of (a) the literature, including an overview of pragmatism, plain language history and research, and (b) themes in existing federal government plain language efforts with a focus on the Army. Scarce recent research has been done to measure progress in the Army toward meeting federal plain writing requirements. Most authors writing about clear communication in the Army have focused on better training programs for leaders or improving communication channels used to reach soldiers rather than the actual readability of content. Of the existing Army plain language research, much has focused on measuring the readability or grade level of training manuals or documents geared toward particular Military Occupational Specialties. Most significantly for the purposes of this study, there is a gap in the literature regarding Army human resources information and plain language. No previous research was discovered regarding the accessibility of human resources content including benefits, assignments, promotions, training, and education messaging.

Chapter 3 provides an overview of the study's methodology, including the content that was selected for plain language scoring, the use of the Flesch-Kincaid Readability tool, and how data was analyzed using a one-sample t-test. The one-sample t-test was used because it shows whether there is a statistically significant difference between the mean reading ease and grade level scores of HRC information and soldier's mean grade level and target reading ease scores. The chapter begins with an overview of the content used to generate plain language scores. Hundreds of human resources documents are published each year. Twenty-five of each from every year between 2012 and 2016 were randomly selected for a total of 250 documents. All of these documents were then scored using the Flesch-Kincaid readability tool to determine reading ease and grade level scores for each individual document. The mean of these scores was then compared to the mean

established reading ability and grade level of soldiers to determine whether there was a statistically significant difference between readability and grade level of HRC information and the target scores. This data was used to draw conclusions about how the readability and grade level of HRC content compares to plain language targets.

Following the methodology, Chapter 4 provides the results of the plain language analysis including comparing mean readability scores against recommended plain language guidelines. Similarly, grade level scores were tested against the average education level of soldiers.
In the conclusion, Chapter 5, the results were summarized and interpreted to determine whether the Army is communicating clearly to soldiers based on mean reading ease and grade level scores of HRC content. Chapter 5 also includes a discussion on how the results support pragmatism broadly, and transfer theory more specifically, with the proposed HRC plain language tool. Implementing a process map tool to analyze documents using the Flesch-Kincaid readability test, and, if needed, rewrite content based on DoD plain language guidance, will create extra steps in the writing process but it will also help produce clearer content. This would enable HRC to better harness the power of web and social media to translate complex human resources information into actionable, plain language messages.

A study of Army human resources information must be placed in the context of the plain language movement. Chapter 2, a review of the literature, will delve into the existing plain language research with a brief, broad focus on federal government efforts with an emphasis on human resources information and a more in-depth focus on the Army.

Chapter II

LITERATURE REVIEW

A large body of interdisciplinary literature has grown around the plain language movement, showing that easy-to-understand information empowers consumers to make decisions and act (Dubay, 2004). Plain language is mandated for federal government writing, yet bureaucratic organizations continue to suffer a reputation for poor communication (Matveeva, 2017). According to Annetta Cheek, co-founder of the Center for Plain Language, bad habits die hard among bureaucrats. A lot of it has to do with institutional culture. Writing in gobbledygook for so long … these agencies … can't see a different way of thinking about how they write for their intended audience (Steinmetz, 2013).

The military, in particular, is notorious for filling communication with jargon and acronyms (Saber, 2018). As an early adopter of plain language in the 1960s, the Army focused resources on increasing literacy and developing readability formulas to improve writing (Zhou, Jeong & Green, 2016). However, since the resurgence of the plain language movement, with the Plain Writing Act of 2010, little research has been done regarding the Army's efforts to communicate more clearly. What research is available indicates the Army's focus on developing leaders' communication skills and issuing writing guidance has not translated into increasing access to information for the average soldier (Ford, 2015).

Historically, the Army's communication focus has been on improving battlefield information with little emphasis placed on translating human resources guidance for soldiers (Blackburn, 2014; Duffy, 1985). This lack of focus on human resources information is detrimental

to recruiting and retention since clearly articulating benefits is key to attracting and retaining a skilled workforce (Allen, Bryant & Vardaman, 2010; Stone, Deadrick, Lukaszewski & Johnson, 2015). The goal of the proposed study was to contribute to filling a gap in plain language research by measuring how clearly the Army shares human resources information with soldiers. The study also moves beyond the Army's current practice of issuing writing guidance to offer a plain language tool to score and improve the readability of HRC's content.

Organization of Literature Review

The literature review begins with an exploration of pragmatism, the theoretical framework underpinning the study, and transfer theory, which provides a mechanism for sharing academic research with practioners. Following a discussion of these theories, including an overview of key theorists, there is a brief history of the plain language movement with an in-depth focus on Army plain language research. The bulk of the literature review explores key themes, beginning with the consensus that plain language increases understanding, saves organizations money, and is key to Army communication efforts. Next, that the Army's focus on translating technical information and issuing writing guidance to leaders has not increased the readability of content. Finally, that the Army, like other agencies, is losing progress on implementing the Plain Writing Act even though an ever-increasing number of communication platforms is increasing the importance of plain language. Following the discussion of key themes is an exploration of conflicts, controversies, and gaps in existing literature. The literature review concludes with a statement of the problem showing the need for the proposed HRC plain language study.

Theoretical Framework for Plain Language Study

Plain language research is grounded in both pluralism–public, private, and academic groups competing to influence and impact knowledge production–and in pragmatism–academic

researchers focusing on practical outcomes with real-world implications. As the literature review reveals, valuable research to improve the ability of readability formulas to measure and quantify plain language requires pluralism; government entities willing to collaborate with and be shaped by academic researchers. The overarching goal of the plain language movement is to put clearly written information in the hands of consumers. It requires a pragmatic approach of producing research practioners can easily access, understand, and utilize.

Pluralism versus pragmatism is part of a broader debate about whether academics should pursue knowledge for the sake of knowledge or whether research should be conducted to serve a practical benefit. Authors such as Brubacher (1982) proposed that academia should focus on epistemology, studying the nature of knowledge, and pragmatism, sharing academic knowledge. The majority of scholars seem to agree that pragmatism is preferred (Weerts & Sandmann, 2010). In fact, according to Li and Wang (2015) the passage of the 1862 Morril Act, which created land-grant colleges in the United States, should have laid the debate between knowledge for the sake of knowledge and knowledge to improve society to rest. The Morril Act meant that the mission of American colleges and universities should include a focus on teaching, research, and service, leading to an increasing appreciation of the role of academia in society.

The role that academic research holds in improving society is a relationship that Etzkowitz, and Leydesdorff (1997) referred to as the "triple helix," cooperation amongst academia, government, and industry in the global knowledge economy. Academic researchers can only fill this role of improving society through knowledge transfer which includes the mutually beneficial exchange of knowledge and resources through reciprocal partnerships (Gleeson, 2010). Pluralism can spur the knowledge collaboration and creation process, but only pragmatism, with its

assumption that research should be conducted with the end goal of improving society, can ensure that practical, usable plain language research is created and shared with practioners.

A vast body of research demonstrates that plain language better serves consumers, saves organizations money, and most importantly, can be quantified through readability formulas and user testing (Dubay, 2004). The plain language movement, which began in the 1960s and 1970s, was invigorated by the Plain Writing Act, but progress appears to be stalling (Center for Plain Language, 2018). The pluralistic exchange amongst academics and governmental organizations which was necessary to produce and refine plain language research has already taken place. A reliable, tested, and widely utilized readability test, the Flesch-Kincaid test, has already been developed through partnerships between academic researchers and the military (Zhou, Jeong & Green, 2016).

Continuing to focus on pluralism, researching and discussing the need for plain language, is unnecessary. What is needed is a pragmatic approach which provides practioners with a simple, actionable way to use plain language research to improve government writing. In the words of Korte and Mercurio (2017), since pragmatism focuses on the practical outcomes of what we think and do it "is a perspective that can bridge current divides between scientific paradigms, the theory-practice gap, and academic-practitioner interests."

Creating plain language content requires academics who are willing to utilize communication theory, guidance, and research to develop actionable guidance for practioners to use. Unfortunately, knowledge sharing from academics to practioners is an ongoing challenge in the applied sciences such as public administration. Numerous authors have struggled with the issue of knowledge production and actually sharing information with the professionals interpreting and implementing policy (Mounce, 1997; Van de Ven, 2007). If anything, the gulf between theory and

practice appears to be widening. In human resources specifically, Anderson, Harriott, and Hodgkinson (2001) found academic research was not readily adopted by practioners. Rynes, Giluk, and Brown (2007) determined that less than one percent of human resources managers routinely read journals, in part because academics were not writing for practioners. Numerous authors have called for a simpler approach to knowledge sharing to bridge the divide between theory and practice (Cascio, 2007; Cohen, 2007; Dutton, 2005).

The process of developing practical plain language guidance can be viewed through the lens of pragmatism, or a community of inquiry trying to solve problems via scientific inquiry. Pragmatism, which has its roots in the works of Immanuel Kant, derives from the Greek word for action. It emerged as an alternative to logical positivism which was developed by scientist and mathematician philosophers. Logical positivists rejected Kant's belief that there are a priori elements, derived from innate ideas, reason, and deduction in science. They believed our only source of knowledge of the physical world was through sensory observations.

Logical positivism draws upon the 1840s work of August Comte, who believed humans had transcended religious dogma and should focus on the empirical sciences, specifically physics, to provide a model for all other sciences. As an extension of the enlightenment, logical positivism drew upon scientific developments in the nineteenth and early twentieth centuries to refute German philosopher Georg Wilhelm Friedrich Hegel, whose early 1800s works focused on explaining reality without empirical proof. By demonstrating that knowing and doing are part of the same process, pragmatism attempts to reconcile rationalism: reason is the main source and test of knowledge; with empiricism: sense experience is what produces and tests knowledge (Shield, 2003).

Pragmatism focuses on abduction, or initiating theories by engaging the world. Positivism focuses on induction, or testing theories through empirical observation. Pragmatists seek to discover information counter to their prevailing beliefs to further scientific discovery. Logical positivism emphasizes dualism, or the belief that the world is independent of the subject, while pragmatism seeks to clarify ideas through their relationship to real-world solutions. Logical positivism reduces reality to empirical data that is derived through sensory observation.

Pragmatists believe that truth should guide both prediction and action (Van de Ven, 2007). Charles Sanders Peirce (1905), considered to be the father of pragmatism, thought beliefs commit us to action and urged academics to make their ideas clearer. Early proponents of pragmatism viewed theories as tools to improve society and thought academics should focus on how well knowledge could solve problems (Addams, 1930; Dewey, 1905; James, 1907). This was in contrast to logical positivism, which focused on theories as the finished product of scientific research (Weick, 1999). Later researchers including Rorty (1961) focused on expanding knowledge through action. Rescher (1987) viewed pragmatism as a method to achieve success, rather than a doctrine. More recently, Meyers (1999) viewed pragmatism as a theory of the mind: beliefs and hypotheses are plans for action and of meaning: ideas can be clarified by action. While proponents of pragmatism focus on different details, they all relate theory to practice, focusing on the community of inquiry and the need to clarify ideas through practice.

While pragmatism provides an overarching theory to frame the issue of information sharing amongst academics and practioners, a communication medium is needed to disseminate plain language research (Daft & Lengel, 1984; Evans, 1999). After analyzing more than 4,000 studies, Rogers (2003) found that adoption of academic research depends on the social context of communications. Research findings must be perceived as having a relative advantage over the

status quo; be compatible with current understanding; be simple and explicit; and be observable by being put into practice.

Research is also more likely to be adopted if it is rhetorically persuasive. This idea operates within the framework of pluralism, or managing the various groups that influence and impact the production and sharing of knowledge. Utilizing a pluralistic worldview, Van de Ven and Schomaker (2002) urge Aristotle's use of persuasion across what Van de Ven (2007) referred to as knowledge boundaries between academics and practioners. Messages, which Aristotle called logos, are more likely to be received positively if they include pathos (emotions, beliefs, value, knowledge, and empathy) and ethos (credibility, legitimacy, and authority). The way the message is delivered is more important than the message itself. Pragmatism assumes competing organizations will change when research is relevant and solves real-world problems. Pluralism requires them to.

Van de Ven and Johnson (2006) attempt to solve the knowledge-sharing problem through a theory they call "engaged scholarship." They focus on using collaborative inquiry between academics and professionals to produce research. Findings are translated and shared in a way that encourages feedback, rather than the more typical one-way communication from sender to receiver (Carlile, 2002). Engaged scholarship relies on a pluralistic approach, where industry or government influences academics and knowledge sharing facilitates learning.

In addition to focusing on persuasion through rhetoric, pluralists believe research is more likely to be adopted if it engages and reflects the views of leading members of the adopting community. Van de Ven and Johnson (2006) encourage drawing upon various disciplines and involving both practioners and academics to increase the likelihood of producing quality, relevant research. Pragmatists, on the other hand, are more concerned with conducting research that

addresses relevant problems. They avoid becoming involved in organizational power struggles while producing knowledge. This is why McKelvey (2006) refutes engaged scholarship, describing the theory as one that only sounds good on paper. He writes that a pluralistic approach leads to the risk of decision by committee, power contests, and settling for the lowest common denominator. Taking a more pragmatic approach, McKelvey writes that practioners do not have the time to wait for academics to publish, and industry professionals do not have an incentive to collaborate with their competitors.

Vogel (2010) draws upon Van de Ven and Johnson's engaged scholarship theory to propose a solution to the knowledge sharing problem more grounded in pragmatism than pluralism. Rather than focusing on pluralistic collaboration between academics and professionals during the knowledge production process, Vogel focuses on a pragmatic approach of building better communication relationships. Instead of fixating on what academics and practioners could achieve under perfect conditions, Vogel measures how knowledge sharing actually happens. He categorizes knowledge sharing into three methods: parallel, transfer and collaboration. In the parallel method, theory and practice are distinct. With transfer, research knowledge is translated and diffused into management practice. In collaboration, practitioners and academics work together throughout the entire process.

Vogel's conclusion, that the pragmatic transfer strategy was more often utilized than the pluralistic collaboration approach, is in line with previous authors' findings (Dutton, 2005; Korte & Mercurio, 2017). While Vogel's theory doesn't exclude practioners from informing the research creation or problem-solving process, it avoids placing unrealistic burdens on academics and practioners to work together throughout the entire process. Knowledge transfer also escapes the

pitfall of academics being unduly influenced by professionals as with Van de Ven's engaged scholarship theory.

Academics should consider real-world problems; conduct research that focuses on solving those problems; and then share practical, solution-oriented findings with practioners. Knowledge distribution must go beyond publishing articles, toward more innovative approaches to reach practioners (Vogel, 2010). The entire goal of the plain language movement is to more clearly share government information with the public, which is why this study will focus on knowledge transfer to achieve pragmatism's vision of a community of inquiry translating, transferring, and utilizing research to improve society.

History of the Plain Language Movement

The plain language movement, which began in the 1960s, gained traction in 2010 when federal agencies were mandated to communicate more clearly and effectively. Plain language focuses on readability which Klare (1963) defined as "the ease of understanding or comprehension due to the style of writing." The interdisciplinary movement, rooted in pragmatism, offers practioners in public administration, healthcare, business, science, engineering, law, etc., an approach to language and writing designed to produce more readable content for consumers (Matveeva, 2017). Writing plainly does not mean "dumbing down" information. It requires carefully formatting documents, using vocabulary familiar to the reader, and crafting logical, easy-to-follow sentences (Kimble, 1999).

In order to measure the readability of documents, plain language researchers developed formulas based on linguistic statistics (Duffy, 1985). Readability formulas are designed to measure comprehension by approximating how many years of education a person would need to understand a piece of writing. The very first readability formula was developed by Lively and Pressey (1923).

In 1928, Vogel and Washburne used children's books to build upon the Lively and Pressey formula, creating the Winnetka formula, the first equation to predict difficulty by grade level. This laid the groundwork for modern formulas which calculate both reading ease and grade level. Ojemann (1934) increased the rigor of readability formulas as the first plain language researcher to include adults in establishing the criteria. That same year, Gray and Leary (1935) published the landmark "What Makes a Book Readable," explaining that content, style, format, and organization were key. The publication of their book, according to Dubay (2004), stimulated enormous effort to find the "perfect" readability formula. This research culminated in two agreed upon variables for all readability formulas, semantic and syntactic. Semantic is the use of vocabulary. Syntactic is sentence structure, including average sentence length. By the 1980s, there were more than 200 equations, including ones developed specifically for the U.S. military, and more than 1,000 published studies about readability formulas (Dubay, 2004; Zhou, Jeong & Green, 2016).

In the 1960s and 1970s, prior to the Plain Writing Act, several state and federal laws were enacted requiring clear communication including the 1964 Truth in Lending Act, Civil Rights Act, and the Electronic Funds Transfer Act. Plain language legislation was designed to put consumers on equal footing with industry in terms of contracts (Bowen, Duffy & Steinberg, 1986). In 1998, President Bill Clinton directed federal agencies to issue regulations and documents in plain language (Dubay, 2004). The movement was further bolstered in 2010 and 2011 with the more explicit legislation of the Plain Writing Act and a shift in focus from developing new formulas to applying the concepts of readability (Zhou, Jeong & Green, 2016). Readability equations such as the Flesch-Kincaid, Gunning Fog Index, SMOG Index, and Automated Readability Index, which were developed in the 1960s and 1970s, were used to evaluate content in order to improve readability.

According to the Center for Plain Language (2018), the Plain Writing Act in 2010 and Executive Order 13563 in 2011, mandated all federal agencies use plain language in any document that:

- Is necessary for obtaining any federal government benefit or service or filing taxes,
- Provides information about a federal government benefit or service,
- Explains to the public how to comply with a requirement that the federal government administers or enforces.

The act required federal agencies to establish plain language working groups, train employees, develop web resources, report on implementation efforts, and solicit public feedback to improve writing. Additionally, the non-profit Center for Plain Language (2018) issues an annual report card which grades agencies on their writing and organizational compliance with the Plain Writing Act. The report collects information on staffing, training, maintaining a plain language website, and meeting reporting requirements. Writing grades are determined by collecting sample documents and analyzing metrics like average sentence length, the use of passive voice, and overuse of prepositions (Steinmetz, 2013).

U.S. Army and Plain Language Research

The U.S. military as a whole, and the Army in particular, were early adopters of plain language, launching numerous research projects in the 1960s and 1970s to measure soldiers' reading abilities and improve writing. Much of the Army's research focused on developing new readability formulas to measure the grade levels and reading ease of content (Kincaid, Fishburne, Rogers & Chissom, 1975). Several extensive studies used military technical and training materials and regulations to develop and test some of today's most popular readability formulas including the Flesch-Kincaid grade level formula (Hooke, De Leo, & Slaughter, 1979; Klare, 1976).

The FORCAST formula, one of the first developed for the military, calculated reading ease by counting one-syllable words in written content (Caylor, Sticht, Fox, & Ford 1972). The model was developed by the Human Resources Research Organization after studying reading requirements for Military Occupational Specialties (MOSs) in the Army. Researchers wanted FORCAST to be based on key reading material for specific jobs in the Army; targeted toward the young, male population; and simple and easy for personnel to apply without special training or equipment. Similar to other readability formulas, FORCAST was developed using cloze testing (filling in missing words to estimate understanding of text). Researchers asked enlisted soldiers to fill in every fifth word in passages which were assigned grade levels. The tests were performed with 395 Army recruits and cross-tested on an additional 365 recruits. Multiple regression was then used to determine how closely assigned grade levels matched actual reading ability. The FORCAST model was unusual because it did not consider sentence length as a factor in determining readability, making it more useful for short statements, applications, and forms, but not necessarily longer passages (Dubay, 2004).

One aspect of the FORCAST research, which is of interest to the proposed HRC plain language study, is that Caylor, Sticht, Fox, and Ford (1972) found content for all of the MOS's they studied was written above the target ninth grade level. The researchers concluded that new measures needed to be put in place to make materials accessible to the majority of soldiers. Hooke, De Leo, & Slaughter (1979) validated the FORCAST model in a separate study with U.S. Air Force personnel and found that more than half of writers underestimated the grade level at which their material was written. The Army was not alone in seeking to develop its own readability formulas. The Air Force also created the widely used Automated Readability Index with the goal

of having a typewriter sensor that could count cumulative words and sentences to measure readability (Senter & Smith, 1967).

Of all the readability formulas developed for the military, the most significant was the Flesch-Kincaid, developed by Kincaid (1975) and adopted from Flesch's existing formula for the U.S. Navy. Similar to Caylor's FORCAST formula, Kincaid's equation was grounded in the assumption that if content was written at an appropriate grade level, participants should be able to correctly fill in missing words. The Flesch-Kincaid formula for grade level and reading ease became the most extensively adopted and validated readability formula (Dubay, 2004).

Since existing readability formulas had never been validated with military personnel, resources were invested into developing new equations. Communicators feared military style, format, technical terms, and jargon would lead to content scoring poorly, inflating reading difficulty relative to the ability of military personnel to understand the information. Kincaid (1975) also criticized existing formulas for only considering word difficulty. New formulas added in the element of sentence difficulty, making passages easier to rewrite by simply shortening sentences. Researchers discovered that adding sentence difficulty to the new, revised formulas also increased the formula's ability to predict reading comprehension–or the ability of a person to understand a passageway based on their educational attainment.

Readability formulas created during the resurgence of the plain language movement in the 1960s and 1970s, including ones developed specifically for the military, are an example of the community of scholarship which underpins the theory of pragmatism. Research focused on why the formulas worked and how to improve them, which led to the creation of more robust, reliable formulas (Kincaid, Fishburne, Rogers & Chissom, 1975). These academics were interested in generating practical research that communicators could use in the field. They tested many of the

formulas using cloze testing (asking participants to fill in missing words to gauge comprehension) and studied variables such as reading ability, prior knowledge, interest, and motivation. They also explored discrepancies in scores to better understand the effectiveness of the different formulas.

While academics did base their work in pragmatism, producing research which has real-world applicability, the missing link seems to be the transfer of this knowledge to practioners. The formulas were validated and endorsed by the Department of Defense (DoD), but in the literature the formulas do not appear to have been effectively shared or incorporated into the actual process of creating, evaluating, and improving military writing. The focus on developing new formulas specifically for the military may have been hampered by the pluralism underpinning Van de Ven and Johnson's (2006) engaged scholarship theory: academics working hand in hand with practioners to shape research. The justification that existing readability formulas shouldn't be used to score military content, due to unique jargon and terminology, misses the point of the plain language movement. Write for the average person.

The main issue with the creation of new readability formulas is the lack of evidence in the literature that these formulas were ever widely used by the military. Engaged scholarship theory was criticized for potentially leading to academic research being unduly influenced by industry, which seems to have happened with the investment in military-specific readability formulas. The focus on creating new readability formulas did further plain language research. Incorporating sentence difficulty led to stronger formulas, but in the literature, it doesn't appear that the newfound knowledge was actually shared or implemented to improve military writing. Rather than just creating new formulas, a better use of resources would have been to model Vogel's (2010) transfer theory: academics conduct research independently and then share information with practioners in a way which enables problem solving. The focus on creating military-specific

readability formulas did little to advance plain language in the Army itself because it did not provide communicators with all of the tools they needed to create plain language content.

According to Gieseman (2015), the Army did try to advance plain language in the 1980s with the establishment of the Army Writing Program to eliminate poor writing. A 1986 pamphlet, Effective Writing for Army Leaders, directed leaders to strive for "good writing" which is clear, concise, to the point, and utilizes active voice. While the Army Writing Program was a step in the right direction, Gieseman explains that the effort failed because leaders neglected the program's guidance to coach and mentor writers. Directing leaders to improve writing, without transferring practical guidance through education and training, did nothing to increase soldiers' access to plain language information.

Like all organizations, the Army's plain language efforts faced further setbacks in the 1990s with the advent of personal computers (Gieseman, 2015). To keep pace with an exponential increase in content, the Army shifted its focus to improving grammar, mechanics, and word usage. In 1999, the Army developed a course entitled Effective Army Writing. While it didn't explicitly mention plain language, the training focused on writing style, the process for effective writing, and practical guidance for selecting words and phrases. More recently, the Army's Civilian Education course added a section on writing effectively and the Army published a Staff Writing Guide for Army Action Officers (Department of Defense, 2019).

According to Gieseman (2015), the issue with concentrating on writing form over function is that it focuses on writers' intentions without considering readers' expectations. Since the passage of the Plain Writing Act, the Department of Defense has maintained an official DoD Plain Language Website with links to training and writing style guides (Department of Defense, 2019). Yet without explicit research on the Army's implementation of the Plain Writing Act, or

continuous training for all staff, it is unclear how successful plain language efforts have been. Simply having guidance in place, without engaging staff, or measuring the current readability and grade level of content, does not guarantee plain language content for soldiers.

Plain Language Increases Understanding and Saves Organization's Money

The Army was on target in investing resources into clear communication: a large body of interdisciplinary literature has grown around the movement showing that plain language is easier to understand and better serves readers (Kimble, 1999). Proponents of plain language view it as necessary to improve government writing which is frequently complex, convoluted, and hard to follow. Without clear writing, consumers are left with more questions than answers and a diminished ability to make informed decisions about their health, rights, and finances (Matveeva, 2017). Beyond meeting Plain Writing Act requirements, making information accessible to government employees and the public saves agencies money in terms of time and resources (Miller, 1999).

Numerous authors have quantified agencies' actual cost savings after implementing plain language. A 1991 study by the Navy found that writing memos in plain language could save $250-350 million per year, based on a 25%-time savings multiplied by average salaries per hour. The Veterans Administration rewrote one form letter and saw the number of calls to a regional call center drop from 1,100 to 200 in one year. When the Farm Credit Administration cut more than 4,000 words from a document explaining Freedom of Information Act fees, the information was easier to understand and the agency saved on printing costs (Myers, 2013). Kimble (1999) reviewed 25 separate studies, including from the Veterans Administration, Navy, and Army, which showed significant cost savings through plain language initiatives. Transferring plain language

research from academics to practioners has clear benefits for agencies and consumers in terms of making information more accessible and saving money.

Clear Need for Plain Language Focus in Army Communications

The military has traditionally focused on literacy and clear communication due to the massive technical requirements placed on soldiers. Duffy (1985) described reading ability as more critical in the armed forces than in any other part of our society since massive numbers of personnel must be trained to operate and maintain sophisticated, costly, and dangerous equipment. In 1989, Harmon wrote that as technology advances there would be an increasing burden on the Army to ensure soldiers have adequate academic skills.

The Army's primary communication goal is to more quickly and efficiently share information with soldiers on the battlefield (Blackburn, 2014;). As such, the Army has mainly concerned itself with the technology of communications i.e. building combat information sharing systems and improving training for leaders (Ford, 2015). In the words of Starry and Arneson (1996), "As long as war has been waged, information has been key. Knowing the battlefield, controlling forces and informing leadership are challenges today's commanders have always faced."

Harmon (1989) focused on the academic skills necessary to train for and perform high-density MOSs, categorizing requirements into basic, intermediate, or advanced skills. The most distinct finding of the research was the substantial need for effective reading abilities. The researchers found that while soldiers could perform most training and tasks with basic and intermediate level reading skills, switching to a new MOS or successfully performing leadership tasks required advanced reading skills.

Increasing the readability of training and technical content would certainly improve Army readiness by helping soldiers advance in their careers. Yet plain language shouldn't just be viewed as a means to an end. Authors including Jones and Williams (2017) have framed plain language as a social justice issue, meaning equitable distribution of wealth, opportunities, and privileges within a society. After studying the implications for minorities of poor writing in mortgage documents, the authors argued that language accessibility incorporates issues of human rights since it plays a large role in how citizens are able to engage government and society. Army human resources information, including how to access benefits, promotion, education, and training opportunities, should be available to all soldiers, not just those who can translate and interpret guidance written at a high reading level.

Army's Focus on Writing Guidance has not Increased Readability

Despite the Army's focus on literacy and plain language in the 1960s and 1970s, numerous authors have found that military training materials are typically written well above the reading ability of personnel (Gieseman, 2015). In a survey of more than 4,000 non-commissioned officers (NCOs) by Steinberg and Leaman (1988), many described communication and reading skills as being key. Other researchers have also described strong reading skills as being especially important for NCOs since they are responsible for leading and training enlisted soldiers (Gagne, 1988). Yet, when Harmon (1989) tested the reading ability of NCOs, the majority did not meet the Army's reading level requirements.

Ford (2015) writes that while the Army recognizes that strong communication skills are key to leading soldiers, plain writing has not been emphasized enough throughout all levels of the Army officer education system. The U.S. Military Academy has communication classes, as does the Army Cadet Command, which manages the Reserve Officer Training Corps, the largest source

of officer commissions in the Army. Additionally, clear verbal and written communication skills are heavily emphasized throughout a cadet's time at West Point. Yet according to Ford, neither the Army War College nor the Army Command and General Staff College have core communication-specific course requirements. He believes the solution is integrating written and verbal communication training throughout the entire officer education system.

In addition to recommending the Army focus on plain language training, Ford (2015) advocates for a minor, but significant, tweak to the Army's definition of mission command. "Mission command is the exercise of authority and direction by the command using clear communication and mission order to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations." The definition of mission orders could also be strengthened to, "clear and concise directives that emphasize to subordinates the results to be attained, not how they are to achieve them." Intentionally including wording about plain language may seem like a minor change, but as Reimer (1998) points out, changing military doctrine stimulates creativity to develop new ideas, technology, and organizational design.

Army writing can be improved to make it easier to understand. The BAH document, which was initially presented in the introduction, provides an example of communicators taking complex, difficult to understand human resources information and rewriting it to be clearer. The original document was written almost three grades above the average grade level completed by 80% of soldiers, the group with a high school degree or some college (Department of Defense, 2016). In reality the document may be even less readable to the average soldier since, as previously cited, plain language researchers have found that grade level completed does not translate into actual reading ability (Dubay, 2004).

In contrast, an article written by HRC about the BAH requirements had a reading ease score of 37.5 and a grade level of 12.4. The lead sentence for the article highlighted the main point of the BAH guidance. “Active Duty and Army Reserve soldiers who have not provided proof for basic housing allowance (BAH) at the ‘with-dependent’ rate will see a drop in pay in May.” The article went on to give a simple explanation of what soldiers needed to do to avoid losing out on pay (Hamilton, 2018). Army communicators routinely take complex information and translate it for web and social media yet this does not solve the underlying issue of complex and confusing human resources guidance since numerous authors across HRC, who may or may not be trained writers, develop content.

Conflicts and Controversies in Plain Language Literature

The overwhelming consensus amongst academics and practioners is that plain language helps consumers better understand and act on information. That translates into cost savings for government agencies. Researchers also agree on the components of clear writing: simple, commonly-understood words; short sentences; active voice; and style elements such as headings and bulleted lists (Dubay, 2004). The conflict and controversy which exists in the literature consists of vague responses to “plain writing critics” and a more concrete debate on how to implement plain language, including the use of readability formulas.

While the need for clear communication is widely recognized, Kimble (2016) and other authors including Benson (1985) highlight controversy by addressing “plain language critics.” Perhaps it’s an attempt to maintain relevance and momentum for the movement since efforts to “debunk myths and misconceptions” about plain language mainly consist of strawman arguments. Kimble (1999) writes that most of the criticism against plain language come from the legal field, but cites little concrete evidence of this push-back. He responds to arguments, such as plain

language being about “dumbing down information” and lacking precision, but those beliefs don’t appear to be widely held in the literature. Most authors agree that, if anything, plain language helps uncover ambiguities making it more precise than traditional legal writing. Kimble also makes a point of stating that contrary to the critics’ view, plain language is about more than just using a simple vocabulary, which as previously highlighted, is already a consensus in the literature (Dubay, 2004).

In A Curious Criticism of Plain Language, Kimble (2016) responds to an article by Turfler (2015), which at first seems to be evidence of a major debate in the literature. Kimble writes that Turfler claims plain language advocates perpetuate discriminatory norms and practices, promote a prescriptive style, attempt to standardize language, and view clear writing as morally superior to traditional legal writing. Turfler does write about the “myths and inequalities” that arise from the ideologies perpetuated in the current movement; urging plain language be used wisely and not as a “hegemonic device” to categorize legal writing. Turfler’s rhetoric is loaded, but she is not defending legalese, she’s supporting clear communication that promotes access to justice and encouraging inclusiveness in legal discourse. Her intent is to question whether these ideals are being supported by the plain language movement in in its current form and, rather than reject or dissuade reform, encourage a discussion about how to improve legal writing (Turfler, 2015). Furthermore, despite Kimble’s lengthy refutation of Turfler, her article Language Ideology and the Plain Language Movement, according to Google Scholar, has only been cited a few times which doesn’t indicate a widespread or ongoing debate in the plain language literature.

The majority of actual conflict and controversy centers around how to implement plain language, including an extensive body of literature on developing and evaluating readability formulas (Zhou, Jeong, & Green, 2016). Since the proposed HRC plain language study is not

focused on comparing formulas or developing new ones, most of that research is outside the scope of this literature review. For this study, it is enough to discuss the debate surrounding readability formulas to better understand their capabilities and limitations. Several authors have found that readability formulas produce different scores for the same content. Others have expressed concern about using formulas, which do not consider organization of a document or typographic features such as illustrations, font size, typeface, headings, bullets, or the use of white space (Mailloux, Johnson, Fisher, & Pettibone, 1995).

Criticism of Readability Formulas

With the advent of the plain language movement in the 1960s, Dubay (2004) found more than a dozen articles attacking existing readability formulas. He writes that researchers have long been perplexed by discrepancies amongst readability formulas. Dubay tested one passage for grade level scores with the Dale-Chall, Flesch, FORCAST, SMOG, and Fog formulas. Results ranged from grades 8.1 to 12.3. The debate in the literature is open. Several authors criticized readability formulas after finding that scores did not correlate well with comprehension difficulty as measured by reading tests (Duffy & Kabance, 1981; Kern, 1980). Other authors found that formulas were useful for predicting comprehension difficulty (Bormuth, 1966; Chall & Dale, 1995).

Discrepancies in the literature are likely due to the formulas being approximations of comprehension rather than qualitative judgments of the readability of text. Researchers have offered up alternatives to formulas, such as usability testing, but as Dubay (2004) points out, only readability formulas can offer a simple, objective prediction of plain language. From a pragmatic standpoint, readability formulas are the easiest, quickest, and most effective way to predict whether content is easy or difficult to read.

Some of the most vocal critics of readability formulas were the same researchers funded by the military to develop new formulas. Kern (1980) conducted an Army-specific study of readability formulas to explore whether equations could help achieve plain language objectives, or if there were more effective methods. The researchers found that using the formulas to simplify text and improve scores had no practical effect on improving reader's comprehension. Duffy (1985) and Klare (1976) also found that rewriting passages at an easier level did not necessarily increase comprehension. They feared that putting the focus on achieving a certain readability score may lead to rewriting materials to meet a target score rather than organizing content to meet the reader's information needs. Kern concluded that using readability formulas to determine when reading standards were met and when materials must be rewritten would be ineffective in achieving the Army's objectives. The authors were certainly correct that readability formulas alone would not meet the Army's clear communication objectives, but they were the same researchers who were being funded to develop new formulas.

Kern (1980) and other critics also used discrepancies in scores to justify discarding existing readability formulas. Dubay rejects this argument because it hinges on the formulas varying on one specific piece of content. Instead, researchers should focus on the formula's consistency in predicting difficulty over a range of graded texts. Ultimately, the formulas differ because each one uses slightly different criteria to gauge reading and comprehension difficulty. Different computer programs using the same formula can also cause discrepancies because of how sentences, words, and syllables are counted. The range of scores provided by the formulas, Dubay (2004) reminds us, is because they are not perfect predictors. They provide estimates of difficulty. Kern (1980) and Duffy (1985) each encouraged the military to abandon the use of readability formulas, Dubay (2004) said writers often find simplifying content below the 10th grade level too difficult or not

worth the trouble. But as Dubay points out, there are no practical alternatives to the hard work required to produce plain language content. When large numbers of readers are involved, as with the one million-plus personnel in the Army, even small increases in comprehension pay off.

Without citing a source or study, Kimble (2016) also claims readability formulas are controversial, stating most advocates don't recommend them, or only recommend them as a way of assessing for a lack of clarity. It is unclear what argument Kimble is trying to make, perhaps that readability formulas can't fix poor writing? There is agreement in the literature that while formulas should be used to assess readability, communicators still have to put in the work to improve writing (Klare, 1963). Readability formulas are not a panacea. They cannot be used to improve writing in and of themselves. Rather, they are one part of the solution to poor writing.

Critics of readability formulas fear that communicators will "write to the formula" to achieve a certain score rather than focusing on actually making content more plain-language (Redish; 2000; Schriver, 2000). Yet as Dubay (2004) points out, these writers offer little or no evidence of misuse of the readability formulas and reviewers or editors of government communication would likely prevent something like this from occurring. Furthermore, any attempt to improve the clarity of writing is better than nothing at all.

According to Dubay, there are also major flaws in the most widely cited study criticizing readability formulas: the Duffy and Kabance (1981) study. The researchers examined the effects of changing only word and sentence length on comprehension and concluded that simplifying text made a difference to less advanced readers (which is the audience this study focused on) but made no difference to advanced readers. In a similar study, Charrow and Charrow (1979) found that simplifying text did not make verbal instructions more comprehensible. The problem with both of these studies seems to be that intentionally manipulating words and sentence syntax leads to

unintentionally altering other aspects of the text. In other words, the authors inadvertently made the content harder to understand which then proved their point that making information more readable doesn't actually make a difference (Olsen & Johnson, 1989).

In the most recent study of variability amongst commonly used readability tests, Zhou, Jeong, and Green (2016) also found a statistically significant difference in scores. Consistency in scores increased as the length of the passages increased, but mean readability scores varied from the 10th to the 15th-grade level with the Flesch-Kincaid, Gunning Fog, SMOG, Coleman-Liau, and Automated Readability Index formulas. Varied scores were due to differences in the way word and syllable counts were generated for compound and hyphenated words, contractions, digits, dates, slashes, numbers, acronyms, URLs, punctuation, and other text elements.

While the variability in scores amongst readability formulas is worth mentioning in this literature review, from a practical perspective this does not impact efforts to improve plain language. The majority of practioners have settled on using the Flesch-Kincaid readability test since it is the most widely validated and trusted formula. As long as communicators are not switching amongst different formulas to score documents there should be consistency in the ability of the Flesch-Kincaid formula to predict readers' comprehension. Despite concluding that readability formulas may not have kept up with stylistic changes, and calling for further research in the effects of punctuation, headings, figures, and tables, Zhou, Jeong, and Green (2016) encourage the use of readability formulas to test technical materials. As Dubay (2004) explains, formulas give communicators a starting point to assess and then make changes to documents. Scores should not be treated as precise estimates, but instead used to provide insight into the readability of materials.

The controversy surrounding the reliability of readability formulas appears to be waning. Zhou, Jeong, and Green (2016) point out that in the past few decades, emphasis has shifted from

developing new formulas to a more interdisciplinary approach to plain language. Readability formulas have survived eighty years of intensive application, investigation, and controversy with their usefulness intact within certain limitations (Dubay, 2004). The courts have even upheld readability formulas in cases concerning citizen's rights to clear government information (Fry, 1989). In the 1984 case David v. Heckler, a judge ordered the Department of Health and Human Services to take prompt action to improve the readability of Medicare documents. The case centered around a denial letter which was scored and found to be written at the 16th-grade level. Forty-eight percent of the population over the age of 65 reads below a ninth-grade level.

The variables used in readability formulas provide a framework for clarifying information. It is up to writers to bolster and fill out that frame with tone, content, organization, coherence, and design. The primary takeaway from the plain language movement and the development of readability formulas is simplicity. Communicators should strive to use short sentences, with simple, common words to make writing easier to understand for the majority of readers. As Dubay (2004) explains:

> The research on literacy has made us aware of the limited reading abilities of many in our audience. The research on readability has made us aware of the many factors affecting their success in reading. The readability formulas, when used properly, help us increase the chances of that success.

Critics of readability formulas often advocate for usability testing to gauge clarity and determine whether or not a target audience can comprehend materials (Schriver, 2000). Yet, according to Dubay (2004), it is difficult to reliably match the reading ability of subjects in usability tests to the target audience, making results difficult to replicate. Usability testing is also costly and time consuming. These authors do not argue against usability testing, but rather encourage a more

pragmatic approach which incorporates readability formulas, to measure the reading level of content, and, when feasible, usability testing. Readability formulas remain the most efficient and effective way to test for plain language and provide an objective prediction of text difficulty.

Disagreement over the use of readability formulas and usability testing is part of the larger conflict in the literature on how to implement plain writing. This debate can be distilled down to the very issue that pragmatism tries to address: how do we effectively translate and share academic researcher with practioners? The usefulness of formulas, particularly the Flesch-Kincaid formula, to predict reading comprehension based on grade level completed, is widely accepted in the literature. Continuing to debate the effectiveness of formulas will not enable practioners to write more clearly. Instead, plain language researchers must focus on translating academic research into easy-to-implement guidance to increase the clarity of government writing. Communicators should also advocate for, and demonstrate the value of, clear writing. In *The Government Manager's Guide to Plain Language*, Myers (2013) writes that the DoD has developed plain language training which is available for anyone to use. Yet the existence of plain language training does not mean communicators are writing content in a way that actually meets the needs of their target audience. Gaps in the plain language literature, specifically Army human resources information, reveal the need for a better understanding of the current and target readability of HRC content and a process to improve writing.

Gaps in Plain Language Literature

Hegerfeld (1997) points out that literacy in the military is not a new topic. Even in George Washington's era, reading was a concern and soldiers were encouraged to read *The Bible* to improve literacy skills. Yet, when Hegerfeld was conducting her study, she found that little research had been done on the topic of military literacy since the 1980s. The author planned to do

an analysis of statistical data regarding reading ability in the military, but finding little information, Hegerfeld instead focused more on the process the military uses to improve literacy. She analyzed required reading skills, programs to improve literacy, and the readability and grade level of select documents.

Of the authors who have studied the Army and plain language, Harmon's (1989) report on the reading ability of NCOs and Hegerfeld's (1997) study of Soldiers' reading and writing skills most closely aligns with the intent of the proposed Army human resources and plain language study. Both Harmon and Hegerfeld built upon the military's plain language research in the 1960s and 1970s to draw conclusions about the readability of Army information. Despite stricter qualification tests and more literacy programs than ever before, they concluded the Army was still not meeting its target readability goals.

Readability in an organization as large and diverse as the Army is a major issue because low literacy is a problem which knows no age, education, income level, or national origin. National literacy surveys have shown the larger the audience, the more likely it will include people with average or below reading skills (Dubay, 2004). The military's success depends on soldiers' ability to comprehend and carry out its guidance. As information becomes more critical for health and safety, the importance of plain language increases (Starry and Arneson, 1996). Yet, outside of public health, little research has been done on agency implementation of plain language. The Plain Writing Act required that all federal agencies use "clear government communication that the public can understand and use," but the majority of research focuses on strides made by public health agencies. Numerous authors have explored efforts to share public health messages in ways that low-literacy or English-as-a-second-language populations can understand and process the information (Berkman, et al., 2011; Walsh & Volsko, 2008). Researchers have also analyzed tools

developed by public health agencies to measure the readability of communication products and ensure they meet the agency's own standards (Ridpath, Greene & Wiese, 2007).

In studying Army communication efforts, researchers overwhelmingly recognize the need for strong literacy skills in soldiers (Ford, 2015). Yet in terms of improving clear communication in the Army, most recommendations focus on improving training for leaders or bolstering combat communication channels rather than actually increasing the readability of content (Blackburn, 2014; Zou, 2016). Most significantly for the purposes of this study, authors who have conducted plain language reviews of Army content have focused on training and technical guidance rather than human resources-specific information (Harmon, 1989; Hegerfeld, 1997). Existing research does not consider the soldier as a customer or focus on improving the Army's chances of retaining recruits through clearly articulating pay, promotion, career, and educational benefits.

Hegerfeld (1997) and Harmon (1989) were correct in writing that information for different occupational series could be written at different reading and grade levels, depending on required skill and education level. Likewise, the Army should have the expectation that as rank increases, soldiers should be able to read and comprehend more advanced information. Yet research has not been conducted for human resources specification information which applies to all soldiers, regardless of rank or education level. Information about pay, benefits, retirement, training, and educational opportunities should be presented in a way that it is easily accessible to everyone. It is this gap in the literature that this study is seeking to fill. Does the Army share understandable, accessible, plain language human resources information with soldiers?

Statement of Problem

A PEW (2011) survey asked post-9/11 veterans why they joined the military. And while 90% of those surveyed listed serving their country as a motivating factor, the majority of responses

also focused on tangible educational and career benefits. Amongst the soldiers surveyed, 77% listed educational benefits as important and 57% said learning skills for civilian jobs was a motivating factor. The Army is increasingly middle class and educated. Soldiers have a choice both in joining the military and departing for more lucrative positions in the civilian world (PEW, 2011; Rostker, 2014). The Army must very clearly articulate the benefits of being a soldier, particularly as the organization moves to a new blended retirement system. Previously, soldiers had to serve in the military for twenty years to obtain retirement benefits which provided a disincentive to leaving early. Under the new system, soldiers can retire early and still access retirement benefits which makes it even more imperative that the Army reach soldiers with clear, concise information. To compete with private sector jobs, the Army must plainly articulate the benefits to serving in the military (Rostker, 2014). Information on bonuses, promotions, training and educational opportunities must be received and understood by all soldiers (Myers, 2013).

Despite the increasing importance of plain language, federal agencies in general appear to be losing progress in implementing the Plain Writing Act. The 2017 and 2018 report cards issued by the Center for Plain Language gave the DoD a B in writing and information design. Previously, scores had increased from Cs and Ds to an A in 2016. The military was not alone in seeing a drop in plain language scores. In 2018, there was a significant drop in compliance and writing quality amongst the twenty-three Executive Branch agencies and fifteen cabinet-level departments. According to the authors of the report, average grades dropped from B to C, with agency turnover cited as a major factor in lower grades (Center for Plain Language, 2018).

Table 1. Federal Plain Language Report Card Department of Defense Scores.

Year	Compliance	Writing and Information Design
2012	B	D
2013	B	D
2014	A	C
2015	A	C
2016	A	A
2017	A	B
2018	A	B

The decrease in scores is occurring even as the ease of accessing information online increases pressure on government agencies to create effective, understandable content for broad audiences (Matveeva, 2017). Harmon (1989) forecasted the growing importance of readability, writing that literacy would become increasingly crucial as the military became more technologically focused. According to Gieseman (2015), the Army's inattention to clear communication as a leadership skill is particularly acute in light of the abundance of information channels. PowerPoint, email, satellite communications, radio, television, social media, web content, SharePoint, etc. have actually diminished communication between leaders and soldiers. Technology is creating the illusion of understanding between sender and receiver (Bumiller, 2010). Leaders are expected to assimilate overwhelming amounts of information via multiple channels which negatively impacts comprehension and decision-making (Singer, 2015).

This is why Ford (2015) advocated for the Army to recognize the paradox of modern communication and modify doctrine to emphasize clear communication while improving the officer education system to better equip leaders to harness communication technologies. Modern communication channels can support leader's intent, but only when used by skilled speakers and writers. Otherwise, information can be misunderstood, taken out of context, or neglected. Currently, rather than helping reach soldiers with plain language information, these channels lead to the same complex, incomprehensible information being shared across multiple platforms.

E-Government has the potential to improve access to government information and services, but only if agencies measure results to verify progress and implement steps to improve performance. Along the same lines as Jones and Williams (2017), who framed plain language as a social justice issue, Perillo (2009) writes that easier access to government information leads to more effective and transparent federal programs. Clear communication also benefits government agencies through customer feedback and interaction, all of which are fundamental to a healthy democracy. The Army must ensure that its content, especially its human resources information which impacts soldier's careers, benefits, and earning potential, is written and shared in a way that is accessible and easy to understand.

Over the past 60 years, numerous authors have studied, published, and debated plain language. Several key topics emerge within the literature guided the interpretation of the results of this study in Chapter 5: the need to clearly share human resources information to retain soldiers in a competitive job market; that readability formulas do not capture all aspects of what makes a document plain language; and despite certain disciplines having a unique language, plain language should be an interdisciplinary movement.

Of particular interest to this study is the work of authors including Allen, Bryant & Vardaman (2010) and Stone, Deadrick, Lukaszewski & Johnson (2015) who write that not clearly articulating human resources benefits has a negative impact on recruitment and retention. Research from PEW (2011) and analysis from Rostker (2014) focused on the fact that as soldiers education levels and skills rise the Army will increasingly need to compete with higher paying jobs in the private sector. The Army emphasizes recruitment with large-scale, synchronized, and branded outreach campaigns, yet there does not appear to be any previous research on the effectiveness of the Army's communication efforts to retain its existing workforce. With the creation of the blended retirement system, which did away with all-or-nothing retirement benefits, the Army will be forced to further compete with civilian positions. By establishing a baseline understanding of how clearly the Army shares career benefits with soldiers, this study should shed light on the need to plainly communicate human resources information to retain soldiers.

One of the main topics of debate within the plain language literature surrounds the effectiveness of readability formulas. Numerous authors have tested readability formulas and found that different formulas produce different scores. The formulas have also been criticized for not accounting for key features which make a document easy to read such as organization, illustrations, font size, typeface, headings, bullets, or the use of white space (Dubay, 2004). This study used the Flesch-Kincaid readability formula because it provides quantifiable data about how easy or hard a document is to read and at which grade level it is written. The merits of readability formulas were not further debated, but this study did consider, in the development of a plain language tool, other aspects of plain language which formulas cannot account for.

Of the debates in the modern plain language literature, the most lively seems to be between proponents of plain language and legal scholars. Kimble (1999, 2016) focuses on this in

Writing for Dollars, Writing to Please and A Curious Criticism of Plain Language, writing that legal scholars have historically criticized efforts to write more plainly. Key authors including Dubay (2004) and Zhou, Jeong, and Green (2016) seem to lay this debate to rest; writing that plain language is an interdisciplinary movement and that there is widespread acceptance of the need to make all government information, including legal documents, easy to understand. The debate is relevant to this study because the military, similar to the legal field, has its own unique, precise language filled with jargon and acronyms. This led authors such as Kern (1980) and Duffy (1985) to question the use of readability formulas or advocate for military-specific ones. Other authors questioned the use of readability formulas by suggesting that writers would simply "write to the formula." Readability formulas are not a panacea. Through the creation of a plain language tool, this study will encourage communicators to use the Flesch-Kincaid formula as a baseline to analyze their own writing, and, if necessary, rewrite or reformat documents to increase readability. In the words of Congressman Dave Loebsack, a Democrat from Iowa, commenting on the 2018 Plain Language Report Card:

> Here's something all Americans can agree on–government webpages should be clear and easy to use. That's why I'm troubled that so many agency webpages are still laden with jargon and acronyms and focused more on themselves than the everyday people who need government services, data, and help. We can do better. And there's a law on the books that says we have to do better. (PR Newswire, 2018)

Education levels have been on the rise in the military. The majority of Soldiers have a high school diploma or some college, yet only 18% of Active Duty Soldiers have a bachelor's degree or advanced degree (Department of Defense, 2016). Without plain language human resources information, written at a high school level, the Army will continue to miss opportunities to

communicate with the majority of its target audience. In the age of digital media, myriad communication channels, and a new blended retirement system, the Army will only be able to attract and retain recruits by clearly and compellingly sharing the benefits of being a soldier. Plain language data is needed in order to cast light on unresolved issues and to better understand and improve the readability of the Army's human resources information. The following section, Chapter 3, provides an overview of the study's methodology, including how data will be used to determine how the readability and grade level of HRC content compares to plain writing targets.

Chapter III

METHODOLOGY

Introduction

Achieving the U.S. Army's mission "to fight and win our nation's wars" requires attracting, training, and retaining qualified soldiers. HRC's role in the mission is talent management: offering soldiers opportunities to increase their skills and advance their careers to ensure the Army has the right soldier in the right place at the right time. The Army continuously creates initiatives to build soldiers' skills, yet it buries career, training, and education opportunities in wordy, jargon and acronym-filled human resources documents. While all government organizations are required to follow plain language guidelines, the readability of HRC information has not been measured or compared to the average reading ability of soldiers. The Army publishes all of its human resources information online, yet the Human Resources Service Center helpdesk averages more than 950 calls and 150 e-mails per day. According to Appendix A. Figure 1., inquiries focus on information that is on HRC's website including records requests, special compensation, retirement, identification cards, and career management. This indicates that published information is not clear to soldiers Human Resources Service Center, 2018). To encourage informed decision-making, the Army must ensure messages match the average education levels and reading ability of soldiers. Without access to clear human resources information, soldiers will not be able to take advantage of all the talent management opportunities the Army offers.

Chapter 3 provides an explanation of the methodology of the HRC plain language study to

explore how the mean readability and grade level of HRC information, as measured by the Flesch-Kincaid readability test, compare to soldiers' mean reading ability and education levels. The chapter includes an overview of the sample set, the documents that were selected to generate HRC plain language scores, and which were used to create the data set for analysis. The section also includes an explanation of which scores were used in the final data set and why several scores were removed. Next, there is a description of the instrumentation, the Flesch-Kincaid readability tool, which was used to calculate both a readability and grade level score for each document. This portion also includes a justification for using Flesch-Kincaid instead of other commonly used readability tools.

Following the instrumentation discussion, the research procedures section explains the process for randomly selecting, formatting, and then scoring content to generate readability and grade level scores within Microsoft Word. The data set was used to compare the test variables of mean reading ease and grade level scores of HRC documents against test values. The first step in establishing test values was determining what the readability of the Army's human resources information should be based on the average educational attainment of soldiers.

Test values were grounded in plain language and literacy research and based on Defense Manpower Data Center Reporting System (2019) data which shows that soldiers' education levels remained consistent from 2012 to 2016. This section also includes an overview of the statistical tool, the one-sample t-test, which was used to run the data analysis. Finally, Chapter 3 concludes with a discussion on the limitations of the research analysis.

Methodology

Since the overarching goal of the plain language movement is to put clearly written information in the hands of consumers, this study's methodology was grounded in pragmatism.

The goal of the study was to produce findings which were easy to understand and, if necessary, would enable the Army to improve the readability of its human resources information. The first step in determining whether or not human resource's content is accessible to the average soldier was to establish a baseline understanding of the grade level and readability of HRC information as compared to soldiers' education levels. Understanding whether a gap exists between the level at which human resources documents are written and soldiers' ability to comprehend the information would empower communicators to advocate for and, if needed, put in place processes to improve readability.

This study was constructed to contribute to and fill a gap in the literature, specifically in Army plain language research by employing a quantitative longitudinal research design. Research questions for the HRC plain language study focused on how readable the Army's human resources information is to the average soldier. Findings were based on how the mean readability and grade level of HRC information, as measured by the Flesch-Kincaid readability test, compared to soldiers' mean reading ability, based on education levels. Mean was used instead of median as a measure for the average to maintain consistency with the one-sample t-test, which was used to analyze the data and provide results in terms of mean scores. The study had the test variables of reading ease scores and grade level scores for HRC information (consisting of scores of individual human resources documents randomly selected over five years) and two test values of mean grade level and reading level of soldiers. The test variables of grade level scores and readability were calculated using the Flesch-Kincaid readability test in Microsoft Word and test values were established based on the average educational attainment of soldiers.

Like other readability tests, Flesch-Kincaid uses three parts of writing–the number of sentences, number of words, and number of syllables–to generate both a reading ease and grade

level score for content (Model Systems Knowledge Translation Center, 2014). Flesch-Kincaid was selected for this study because, according to plain language literature, it is the most reliable, widely tested formula and it has also been validated by the DoD (Zhou, Jeong & Green, 2016). Dubay (2004) found that the test could predict significant differences in readability less than one grade apart.

The main purpose of the study was to draw comparisons between the level at which HRC information is written and soldiers' ability to utilize that information. The one-sample t-test was used to determine whether the mean reading ease and grade level scores of HRC information is statistically different from the mean reading ease and grade level of soldiers. After interpreting the results of the one-sample t-test, recommendations were made to establish processes to sustain or improve the readability of the Army's human resources information.

Research questions

The HRC plain language study's research questions and associated hypothesis, which were outlined in Chapter 1, were explored by comparing Flesch-Kincaid reading ease and grade level scores of the Army's human resources information to mean reading ease and grade level of soldiers. Flesch-Kincaid measures readability on a scale from zero to one hundred and fifth grade to college graduate. On the scale, higher reading ease scores translate into lower grade-level scores and lower reading ease scores translate into higher grade-level scores.

Reading ease and grade-level scores for human resources information were calculated by randomly selecting and measuring 250 HRC documents (25 of two different types of documents from each year for five years between 2012 and 2016). Randomly selecting documents across the span of five years to generate reading ease and grade level scores removed bias in sampling. Additionally, to avoid introducing human error, software built into Microsoft Word was used to

generate the scores. As long as the Flesch-Kincaid tool is used to generate reading ease and grade level scores for HRC documents, the results should be reliable, verifiable, and replicable. Results might not be able to be verified or replicated using a different reading ease formula since there are documented variations in scores of the same documents amongst different formulas (Compton, Appleton & Hosp, 2004; Pitcher & Fang, 2007).

For both research questions, reading ease and grade-level scores of HRC information were compared to test values of soldiers' reading ease and grade-level scores. Soldier's reading ease and grade level scores will be based on the average reading ability of active and reserve component soldiers. A review of the literature revealed that while the Army focused on soldiers' literacy in the 1970s and 1980s, more current research has focused on soldiers' average educational attainment (Hegerfeld, 1997).

Based on soldiers' mean education levels, a test variable reading ease score of 60-70 and an eighth-to ninth-grade-level score was established for the study. Any document which scored below a 60 and an eighth-grade level was not be considered to be plain language. These established test variable scores were also validated by previous plain language studies which found that information should be written at an eighth-grade or below level in order to make it accessible to the majority of adults (Badarudeen & Sabharwal, 2010; National Institutes of Health, 2019).

Establishing test value scores for soldiers' mean reading ease and grade level enabled comparisons between the level at which the Army's human resources documents are written and the ability of soldiers to read and comprehend that information. If the mean education level of soldiers increases or decreases the study could be replicated by comparing updated test value scores to the mean Flesch-Kincaid readability and grade level scores of HRC documents. Or if an

initiative is launched to improve plain language the test values could be compared to new Flesch-Kincaid readability and grade-level scores for HRC documents.

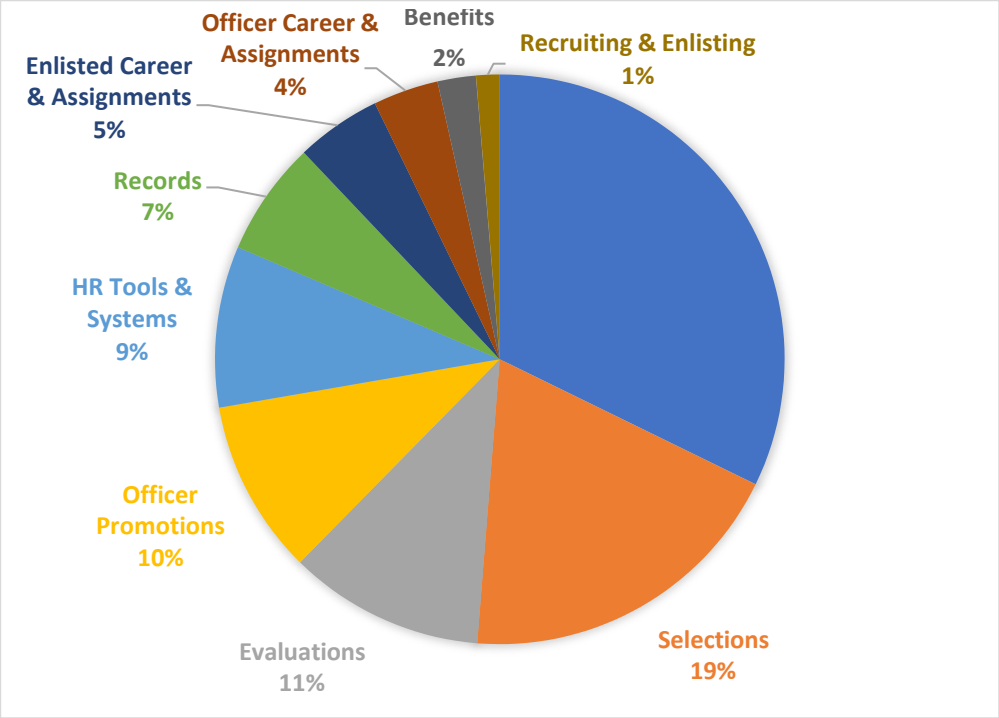
Data Collection

Data used in this study was collected from the HRC website, Facebook, and Twitter. The data was exempt from Institutional Review Board (IRB) approval as found in the approved IRB form (2020) in Appendix B. While the study was part of a systematic investigation, designed to develop or contribute to generalizable knowledge, the research analyzed web and social media metrics and published web content rather than human subjects. Web and social media data were aggregated and individuals were not personally identifiable.

The first step in deciding which HRC content should be analyzed for plain language was determining what information soldiers were most likely to seek from HRC. Web analytics, Go.USA.gov short URL data, Facebook posts, and Tweets were categorized into key topic areas and sorted by popularity to determine which content was most frequently accessed and thus most relevant to soldiers. Next, the actual information HRC produces to keep soldiers informed on human resources, personnel, benefits, training, and education in the form of human resources documents were collected and analyzed to develop readability and grade level scores.

Web and social media data from 2017 helped determine which topics were most relevant to soldiers. Figure 3, which shows the most popular HRC topics by percentage, was created using data which can be found in Appendix C: Table 2. The top twenty-five most visited HRC web pages and most popular social media posts in 2017.

Figure 3. Most Popular HRC Web and Social Media Topics.



The twenty-five HRC Web pages with the most unique visitors, short URL links with the most clicks, Facebook posts with the highest reach and engagement, and tweets with the most impressions were categorized, sorted, and combined by topic area. The most visited HRC Web pages were based on the number of hits, or visits, to each Web page. The HRC homepage, jump pages, and pages which consisted only of lists of links leading soldiers to more information were taken out of the analysis. The most popular short URLs were determined by the number of clicks, meaning soldiers saw the links in feature stories on the HRC homepage or social media posts and clicked to access more information. The most popular posts on Facebook were determined by reach, or number of unique followers reached with the information, and engagement, number of unique followers who engaged with the post by liking it, clicking on it, or sharing it. The most

popular tweets were based on the number of impressions, or opportunities unique users had to see the tweets.

By combining web and social media data, Figure 3 provides a clear picture of the HRC topics most important to its customers: veterans, active duty and reserve soldiers. Soldiers are most likely to seek out information on enlisted promotions, selection boards, evaluations, officer promotions, human resources tools and systems, records, enlisted career and assignments, officer career and assignments, promotions, and benefits. Developing the list of most popular human resources topics was key because it helped ensure the HRC plain language analysis would focus on information relevant to soldiers rather than information HRC thinks soldiers want.

Next, a determination was made as to which specific content should be collected to generate readability and grade level scores. HRC web and social media channels are designed to drive soldiers to more in-depth information on human resources policy, training and education opportunities, personnel actions, and benefits. The Army provides details, including instructions and guidance, in the form of human resources documents. The majority of the most-visited HRC web pages in 2017 provided little actual content and instead were comprised of links to these human resources documents for more detailed information. Similarly, the majority of popular social media posts in 2017 were designed to pique interest in a topic to drive soldiers to these documents. Web and social media serve as channels to direct soldiers to HRC information, which is why those human resources documents were sampled to provide the actual content to generate readability and grade level scores.

Instead of focusing on one specific year, human resources documents from 2012 to 2016 were sampled to provide a broader snapshot of the readability of HRC's information. The Army published hundreds of human resources documents during this time period. Rather than scoring

each one, 25 MILPERs and ALARACTs from each year were selected for scoring using a random number generator for a total of 250 documents. Half of the documents ($N_1 = 125$) were MILPERs and the other half ($N_2 = 125$) were ALARACTs. The final sample size ($N = 250$) was in line with or exceeded sample sizes in similar plain language studies by Harmon (1989) and Hegerfeld (1997).

Instrumentation

In addition to determining which content would be most relevant for the HRC plain language analysis, a decision had to be made regarding how to score content. Readability formulas, which approximate the grade level needed to understand a piece of writing based on vocabulary and sentence structure, were first developed in the 1920s (Duffy, 1985). By the 1980s, there were more than 200 readability equations, including the Automated Readability Index, Coleman-Liau, Dale-Chall, Flesch-Kincaid, FORCAST, Gunning Fog, and SMOG (Dubay, 2004). An alternative to readability formulas is usability testing, which tests individuals on their ability to understand content. Yet this type of testing is time-consuming, labor intensive, and prone to bias depending on the participants selected (Chall & Dale, 1995). Since no previous HRC plain language research existed, there was a need to establish a broad, baseline understanding of readability. Readability formulas provide a simple, objective prediction of plain language. According to Dubay (2004), readability formulas are the most effective, non-biased way to predict whether content is easy or difficult to comprehend. Thus, readability testing was chosen over usability testing.

While researchers have found some variation amongst widely used readability formulas, due to differences in how words and syllables are counted, the Flesch-Kincaid has emerged in the plain language literature as the most reliable, tested, and widely validated formula. According to

Dubay (2004), Flesch-Kincaid was able to predict significant differences in the readability of content less than one grade apart. When Klare (1963) worked with the U.S. Armed Forces Institute to use the Flesch-Kincaid reading ease formula to analyze training content he found a correlation of 0.87 between readability scores and the probability that students would complete a course. Instone (2011) completed a thesis comparing variability in reading level scores of textbooks amongst Flesch-Kincaid, Gunning (FOG), and the Fry readability tests. The author found the Flesch-Kincaid was the most precise of the tests used in the study.

Flesch's work had an enormous impact on journalism, decreasing the average grade level of newspaper stories from 16 to 11 (Dubay, 2004). According to Fry (1986), articles on readability formulas are amongst the most commonly cited types of articles in educational research since they give researchers the ability to control for reading level in their experiments. The DoD has also validated the use of the Flesch-Kincaid formula, endorsing its use in determining the readability of the military's technical manuals. Since Flesch-Kincaid formulas have emerged as the industry and DoD standard for gauging plain language, it will be used in the HRC plain language study to test both reading-ease and grade-level scores.

Similar to other formulas, the Flesch-Kincaid Readability Test focuses on three parts of writing–the number of sentences, number of words, and number of syllables–to generate both a reading-ease and grade-level score for content. The formula for the Flesch-Kincaid grade level score is (0.39 x ASL) + (11.8 x ASW) – 15.59. For the Flesch-Kincaid reading ease score, the formula is 206.835 – (1.015 x ASL) – (84.6 x ASW). ASL refers to average sentence length, or the number of words divided by the number of sentences. ASW is the average number of syllables per word, or the number of syllables divided by the number of words (Model Systems Knowledge Translation Center, 2014).

Table 4 shows how the formula rates content based on a 100-point scale. The higher the score, the simpler the text. For example, “The Foot Book” by Dr. Seuss, a book designed to teach preschoolers to read, has a grade level below zero and scores 118.97. In addition to being easy to use, the Flesch-Kincaid readability formula is built into Microsoft Word, so no additional software was needed to run the analysis. Zhou, Jeong, and Green (2016) also recommend the Flesch-Kincaid test for Microsoft Word because it leads to the fewest counting errors compared to other readability tests.

Table 4. Flesch-Kincaid reading ease scores.

Flesch Kincaid Reading Ease Scores		
90 - 100	5th grade	Very easy to read. Easily understood by average 11-year-old student.
80 - 90	6th grade	Easy to read. Conversational English for consumers.
70 - 80	7th grade	Fairly easy to read.
60 - 70	**8th & 9th grade**	**Plain English. Easily understood by 13- to 15-year-old students.**
50 - 60	10th to 12th grade	Fairly difficult to read.
30 - 50	College	Difficult to read.
0 - 30	College graduate	Very difficult to read. Best understood by university graduates.

Research Procedures

After defining the sample and selecting the formula, procedures had to be established for performing Flesch-Kincaid reading ease tests on each document. As MILPERs and ALARACTs are released, they are numbered sequentially, so a random number generator was used to determine which documents would be analyzed from each year. This helped remove any bias in the study in terms of selecting documents that appeared easier or more difficult to read. Next, each of the 250 documents had to be standardized to perform the Flesch-Kincaid reading ease test. MILPERs are published as web content and ALARACTs are released as PDFs, so each one had to be saved and formatted in Microsoft Word. Certain information that could skew the Flesch-Kincaid-Reading ease results was also removed, such as contact information at the bottom

of the human resources documents. It was determined that including addresses, telephone numbers, and e-mail addresses could lead to a lower readability score since the formula might count each number as its own syllable or word and count e-mail addresses as very long words.

After the documents were prepared, reading ease and grade level were calculated as part of the "Review: Spelling & Grammar" feature in Microsoft Word. All of the scores, which were captured in Microsoft Excel, were then sorted from lowest to highest reading-ease and grade-level scores to discover any outliers or discrepancies. The data scrub was similar to the one performed by Zhou, Jeong, and Green (2016) in their study of readability formulas. The researchers also cleaned up their content prior to scoring by removing titles, figures, tables, equations, headings, and references.

Two documents were rejected based on very high reading-ease scores (85.3 and 70). When these two documents were reviewed, it was discovered they consisted of a list of names of soldiers who had been promoted. Since the intent of these documents was not to explain a policy or procedure, these data points were removed from the final data analysis. Of note, these were the only two documents which surpassed the target reading level.

Six additional documents were removed based on having a grade-level score above 23. This was based on the reasoning that for this study, the Flesch-Kincaid grade-level score should only go up to 23. This grade level was determined by the score for a high school diploma (grade 12), plus four years for a bachelor's degree (grade 16), plus two years for a master's degree (grade 18), plus five years for a doctorate (grade 23). Upon closer examination of these six documents, one was an extremely short document about an amendment to a policy. The other five each contained one very long paragraph that decreased the reading score and increased the grade level, skewing the document's scores. The Flesch-Kincaid reading ease test does not perform as

well on very short passageways since there aren't enough syllables, words, or sentences to reliably calculate scores. When the length of passageways is 500-900 words, readability estimates stabilize out. In documents with fewer words, a single unusual text structure is more likely to lead to an unrepresentative score (Zhou, Jeong & Green 2016).

Since the scores for only eight of the original 250 documents were removed, it was decided that the statistical analysis would be run with scores from the remaining 242 documents rather than replacing the scores from new human resources documents. These scores will be compared against a target reading ease score of 60-70 and an eighth to ninth grade level score.

Data Analysis

The one-sample t-test was used because the goal of the study was to compare the average reading-ease and grade-level scores across the five-year time frame against target plain language scores which were established prior to running the test. Test values were determined based on the average reading ability of active and reserve component soldiers. Since HRC provides human resources information that all soldiers need to be able to understand, it was decided that test value reading-ease and grade-level scores should account for the education levels of the most junior active and reserve component soldiers.

Retirees also access HRC's information, but comparing the grade-level and reading-ease of human resources information to the average reading ability of retired soldiers was determined to be outside the scope of this study. Retirees seek out more static web information, such as how to access Veterans Affairs health or education benefits instead of changes to human resources policy or new opportunities. Furthermore, retirees are not the focus of the Army's talent management, recruiting and retention goals which are concentrated on junior soldiers.

Measuring Soldiers' Education Levels.

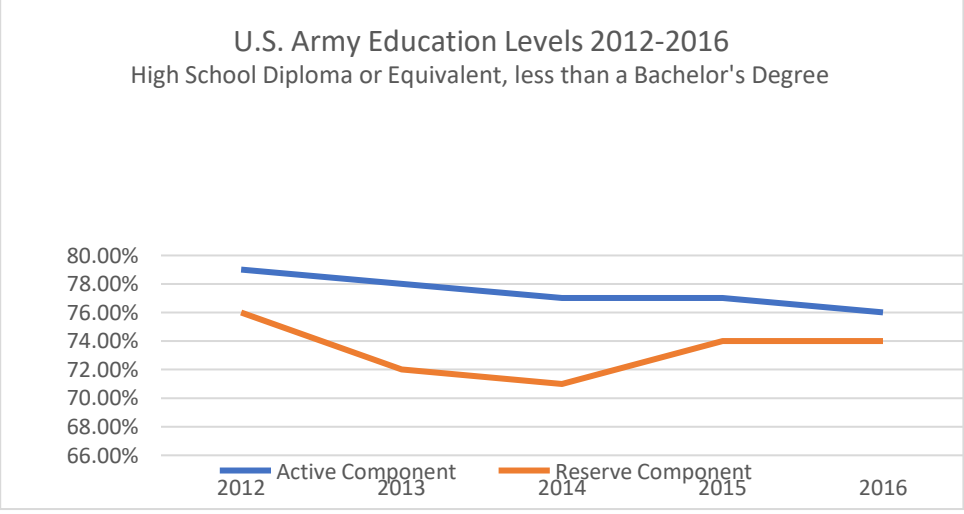
The first step in determining the average education levels of soldiers involved returning to the plain language literature. Several previous authors measured literacy levels amongst soldiers. Data compiled between 1982 and 1986 indicated the mean reading grade level of entering military recruits was 9.5 (Forlizzi & Sticht, 1989). When Smith and Kincaid (1970) validated the Automated Readability Index, they found content written at an eighth grade level was easier for personnel to understand, ultimately recommending technical materials be written at a level of 10th grade or lower. Kern (1980) set a target reading level of seventh grade based on a study by Mathews, Valentine, and Selman (1978) which found that 30% of recruits read below a seventh grade level. In the study which most closely matches the goals and research design of the HRC plain language, Hegerfeld (1997) used the Flesch-Kincaid formula to analyze DoD content. In 1999, Hegerfeld established an eighth grade reading level and a 60-70 reading ease score as being appropriate for most documents. This determination was not made using military-specific literacy data, which Hegerfeld wrote was difficult to find after the 1980s, but instead based on the plain language literature and the Forlizzi and Sticht (1989) research with data collected between 1982 and 1986.

Since the majority of the research on soldiers' education levels was several decades old, the next step was to consult more recent studies. PEW (2011) estimated that 80% of active duty military personnel are high school graduates or have completed at least a year of college or other postsecondary training. The study also found that a substantial majority, 77% of those in the National Guard or Reserves, were at least high school graduates but have less than a bachelor's degree. Similarly, the Department of Defense's 2016 Demographics Report estimated that 76% of active duty soldiers and 73% of reserve soldiers possessed a high school diploma/GED or some

college (Department of Defense, 2016). According to these studies, approximately 76.5% of current active duty and reserve soldiers possess a high school diploma and some college.

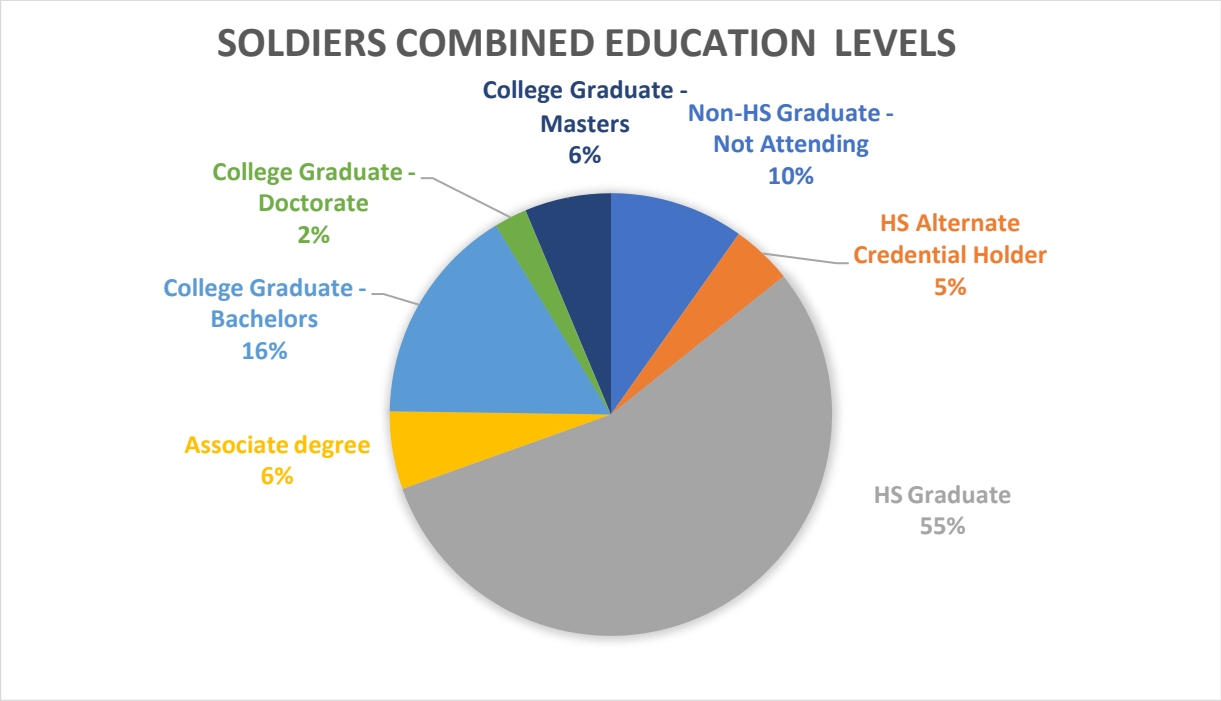
Since the PEW and DoD Demographics reports provide estimates of schooling completed, an analysis of current education levels was completed using 2019 Defense Manpower Data Center Reporting System data. Figure 4. U.S. Army Education Levels 2012-2016 shows that there was little change in the average education level of soldiers during the five-year time period that the human resources documents were collected for analysis. The percentage of soldiers who held a high school diploma or equivalent, but less than a bachelor's degree, ranged between 76% and 79% for active component and between 71% and 76% for reserve component soldiers. Since education levels remained steady from 2012 to 2016, a decision was made not to use different test values for grade level and readability for each individual year. Instead, standard test values for grade level and readability were established to compare to test variables. Displaying scores by year also helped determine whether there were any significant changes, in terms of increases or decreases in readability and grade level scores.

Figure 4. U.S. Army Education Levels 2012-2016.



Education data for soldiers is usually reported in percentage who have completed high school and some college. Figure 5, shows Defense Manpower Data Center Reporting System (2019) education levels for enlisted and officers based on Appendix D. Table 3. and Appendix E. Figure 2. U.S. Army enlisted and officer education levels.

Figure 5. Soldiers combined education levels enlisted soldiers and officers.



A more detailed breakdown of grade levels shows that while 90% of soldiers hold at least a high school or equivalent degree or above, 10% have not completed high school. Plain language research also confirms that grade level completed does not translate into actual reading ability (Badarudeen & Sabharwal, 2010). A 1994 study on pediatric patient reading materials found that the average participant read at a seventh-or eighth-grade level despite having, on average, completed 11th grade plus 5 months of school (Davis, Mayeaux, Fredrickson, Bocchini, Jackson & Murphy, 1994). Similarly, Dubay (2004) found that the average high school graduate reads at a ninth grade level. According to the National Adult Literacy Surveys, nearly half of the U.S.

population is either “functionally illiterate,” meaning zero to fifth grade reading skills, or “marginally literate,” meaning sixth to eighth grade reading skills (McCray, 2005). Approximately 25% of functionally illiterate people have graduated from high school (Johnson & Weiss, 2008).

The majority of research on plain language and clear communication has been conducted in public health where both academics and practioners believe that, if the general population is expected to understand information, it should be written at less than a high school level. The American Medical Association and National Institutes of Health recommend a readability of no higher than sixth grade for patient information, while the Centers for Disease Control and Prevention advises a lower than an eighth grade level (Badarudeen & Sabharwal, 2010).

Public health information must be written to make it equally accessible to everyone, regardless of their education level. Similarly, the Army’s human resources guidance should be written in a way that soldiers with the lowest education levels can read and comprehend the information. Figure 4 shows that while 30% of soldiers have college degrees, 60% only have a high school degree or equivalent and 10% have not graduated high school. Based on the fact that the majority of soldiers have completed at least 12th grade; studies which show people often read two to three grade levels below their education level; and given that education levels of soldiers remained steady from 2012 to 2016, a test value reading ease score of 60-70 and a test value grade level of eighth-to ninth-grade was used in the one-sample t-test. Anything higher than these target scores means the Army risks making its human resources information inaccessible to almost three-quarters of its population.

Analytic Procedures

Several other statistical tests, including the paired sign test and the dependent t-test, were considered prior to selecting the one-sample t-test to be used in data analysis. Ultimately both the paired sign test and the dependent t-test were rejected because they did not meet all of the required assumptions. Most importantly, the independent variables (the human resources documents) did not meet a paired criteria because the documents were randomly selected for analysis and did not consist of related groups or matched pairs. The one-sample t-test, which is used to determine whether a sample comes from a population with a specific mean was used because it provides a similar analysis to the paired sign and dependent t-test and the data met all of the test's assumptions outlined by Laerd Statistics (2019):

- The dependent variable must be continuous (interval/ratio).
- The observations are independent of one another.
- The dependent variable should be approximately normally distributed.
- The dependent variable should not contain any outliers.

First, the dependent variables of reading ease score and grade level were measured at the interval or ratio level. Second, the data was independent, not correlated or related, meaning there was no relationship between the observations. Third, outliers from the original data set were scrubbed so there would not be significant outliers which could reduce the accuracy of the results from the one-sample t-test. After cleaning up the final dataset, establishing the Flesch-Kincaid reading ease and grade-level target scores, and confirming that the data met all of the necessary assumptions, the one-sample t-test was performed in SPSS. Data analysis essentially consisted of up to 500 individual one-sample t-tests since 250 total documents were analyzed, each generating two individual scores each for reading ease and grade level. Five years of human resources document reading ease and grade level scores were compared against Flesch-Kincaid targets of

60-70 and eighth to ninth grade to answer the study's research questions and gauge the readability of HRC information.

To answer research question one, which explores reading ease, the Flesch-Kincaid test was used to determine the mean reading ease of the HRC information. The one-sample t-test was used to determine whether the mean Flesch-Kincaid mean reading ease of HRC information was statistically different from the established mean reading ease of soldiers. The test variable was the reading ease score of HRC information and the test value was the mean reading ease score of soldiers. The test value was interpreted using the Flesch-Kincaid reading ease score of 70 for HRC information.

The Flesch-Kincaid test was also used for research question two, focused on grade level, to determine the mean reading grade level of the HRC information. The one-sample t-test was used to determine whether the mean Flesch-Kincaid grade level of HRC information was statistically different from the mean grade level of soldiers. The test variable was the reading grade level of HRC information and the test value was the reading grade level of soldiers. The test value was interpreted using the Flesch-Kincaid grade level score of ninth grade for HRC information. Answering these two research questions has the potential inform and guide communicators in maintaining or improving the readability of the Army's human resources information for soldiers.

Research Limitations

Prior to discussing the results of the data analysis in the following chapter, it was important to consider the research limitations of the proposed HRC plain language. Formula results are predictions, not facts. Formulas can't account for all aspects of readability. Readability

does not necessarily mean comprehensibility, and grade level and readability scores vary amongst different formulas.

Reading ease tests like the Flesch-Kincaid do not consider individual readers but instead provide a prediction of the ability of a generalized population to understand content (Chall, 1981). This means that tests are not designed to account for any conflict of interest that the reader might have or personal biases. Readability tests also don't reflect the interactive nature of the reading and understanding information. Tests do not consider cultural factors such as race, ethnicity, socioeconomic status, etc., or account for different subgroups within the population. Based on cultural differences, people might view and interpret what they read differently which could impact their comprehension. The tests are also based on subjects who are native-born English speakers which means that a soldier for whom English is a second language may struggle to understand content even if they have reached the recommended grade level for readability.

There are also many aspects of readability the formulas overlook and distort. For example, readability tests do not look at the formatting of content even though information is easier to understand when it is presented in columns, tables, or bulleted lists as opposed to one lengthy portion of text. Additionally, readability does not guarantee comprehension which may rely on a reader's familiarity of the topic as much as the grade level at which the materials are written (Rush, 1984). This means that soldiers who are unfamiliar with a topic, or are reading about a topic for the very first time, might have difficulty understanding the information even if it is written at an appropriate grade level. On the other hand, soldiers may have background knowledge, a familiarity with a subject matter, or knowledge of jargon or acronyms which may increase their understanding of content. This could lead to the tests overestimating the grade level needed to understand content.

As Instone (2011) points out, each test uses different variables including number of words, sentence length, average number of syllables, and vocabulary. For example, the Flesch-Kincaid test counts contractions and hyphenated words as one word and each individual number as one syllable. When formulas are applied to shorter sections of text results can also vary across different grade levels (Compton, Appleton & Hosp, 2004). This means that results will differ across tests and the results of any one test can't be considered "fact" (Pitcher & Fang, 2007).

For the purposes of the HRC plain language study, the variation in results amongst reading tests means could lead to other researchers using a different test producing different results. This means that while the methodology could be replicated using the Flesch-Kincaid formula, it can't be replicated with other readability tests, decreasing the capacity to confirm or disprove the results of the proposed study. Keeping these limitations in mind, the following section, Chapter 4, discusses the results of the HRC plain language study.

Chapter IV

RESULTS

Introduction

Pragmatism, which advocates for practioners and academics to work together to solve problems and improve society through scientific discovery, is the foundation of the plain language movement (Shield, 2003). Readability formulas were first developed in the early 1900s to increase the readability of school textbooks. In the mid 1960s, the U.S. military hired academic researchers to improve existing formulas to enhance the readability of training materials and job aids (Klare, 1976). In 2010, with the passage of the Plain Writing Act, a renewed emphasis was placed on plain language for government agencies.

The Army has stressed clear communication for leaders since the 1970s. Plain language efforts have focused on training for individual officers and non-commissioned officers to issue clear orders to subordinates (Bummiler, 2010). The clarity with which the Army as an organization communicates with soldiers, specifically human resources information, has not recently been studied (B. Hamilton, personal communication, October 8, 2018). Measuring and, if need be, improving the readability of government writing, including the Army's human resources information, requires collaboration between academics and practioners. Academics can provide a new, outside perspective to improve readability, but their findings must be shared in a way that serves a pragmatic purpose for Army communicators. Vogel (2010) proposed transfer theory as a way to bridge the divide which has traditionally existed between academia and the real world. He advocated for research to be shared in a practical, solution-oriented manner.

Before recommendations could be made for systems or processes to improve plain language, the readability of the Army's human resources information had to be quantified. The overall objective of this study was determining the mean readability of Army human resources information. In Chapter 4, the results of this plain language study are reported and show that the Army's human resources information does not match the reading ability of the average soldier based on education levels.

Chapter 3 established that human resources guidance which impacts pay, benefits, training, and promotion opportunities for every soldier should be shared in a way that is accessible to all soldiers. Chapter 4 included a brief overview of the variables utilized in the statistical analysis followed by a discussion of reading ease and then grade level score results for the Army's human resources information with assumptions, descriptive statistics, the testing of the research questions utilizing the one-sample t-test, and an exploration of the implications of the results in the conclusion. Chapter 4 laid the foundation for Chapter 5 in which the results are interpreted to draw conclusions about the findings and propose recommendations for improving the readability of the Army's human resources content.

Variables Used in Statistical Analysis

Each of the documents, which were scored using the Flesch-Kincaid formula, provided reading ease and grade level scores. These provide the test variables needed to compare the readability of Army's human resources information to soldiers' mean reading ability. The comparison was performed using the one-sample t-test. Test values had to be established to compare the test variables against. These test values were based on DoD education data which shows that the maximum education level for 60% of soldiers is a high school diploma or equivalent and an additional 10% do not hold a high school diploma (see Figure 5 from Chapter 3).

Since the majority of soldiers have completed 12th grade, the assumption could be that this would be soldiers' mean reading level. Yet, as was established in Chapter 2, literacy research consistently finds that people often read several grade levels below their actual grade completed. Additionally, researchers who studied military literacy found that the average reading ability of service members ranged from seventh- to mid-ninth-grade.

Reading Ease Score Assumptions

Documents published on the HRC website were sampled and evaluated using Microsoft Word's built-in Flesch-Kincaid readability software to measure reading ease scores. The final data set (N = 242) for reading ease scores met all of the necessary assumptions in order to use the one-sample t-test. This test determines the statistical difference between a sample mean and a known or hypothesized value of the mean. The target for reading ease, or test value score, was established as 60 based on DoD education data, the literature, and Flesch-Kincaid plain language guidelines. The one-sample t-test requires dependent variables be measured at the interval level, describing the distance between variables, or ratio level, describing the distance to absolute zero. Reading ease scores are measured at the interval level. A higher score suggests a document is easier to read and therefore more accessible to a wider audience. For example, if a document has a reading ease score of 100 on the Flesch-Kincaid test, the average fifth grader should be able to understand the information. A reading ease score of 80 should be easily understood by the average sixth grader. The target for HRC documents is 60. As I describe later, only two such documents exist in the final data set, and each is captured as an outlier.

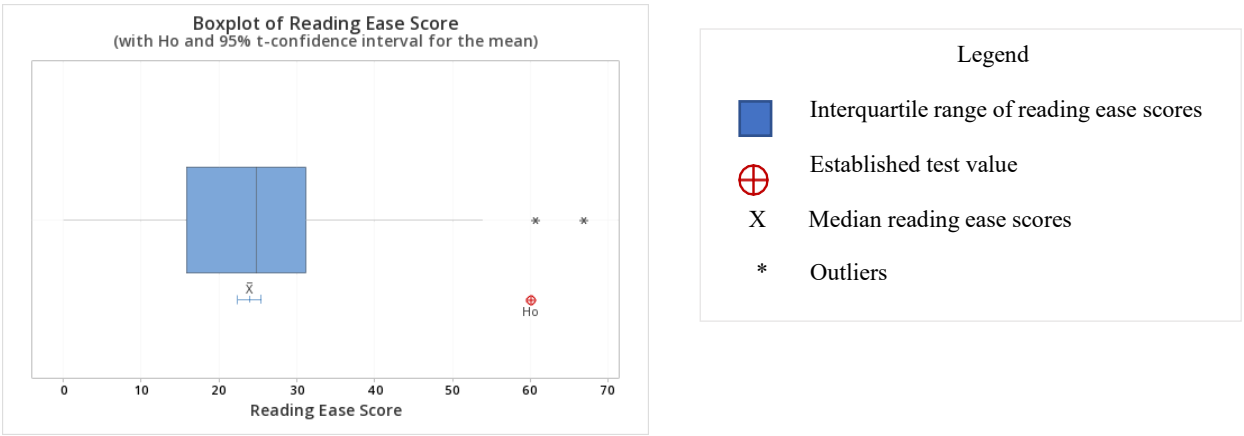
Another requirement of the one-sample t-test is the independence of the data, meaning that samples are randomly selected and there is no relationship between the observations. Each of the documents utilized to generate reading ease scores was randomly selected and there was no replacement of documents. Two reading ease scores of 70 and 85.3 were removed because they

were determined to be outliers. The two documents which generated these scores consisted of just a list of names which the Flesch-Kincaid test scored as easy to read and very easy to read. Since these documents were not providing actual human resources information or guidance they were not representative of the types of documents HRC normally produces or that this study was designed to research.

Figure 6, below, is a boxplot of reading ease scores which displays the difference between the level at which the Army's human resources information is written and the level at which it is predicted it should be written to be easily understood by the average soldier. It shows the distribution of the data in quartiles, meaning the data are divided into four approximately equal parts. For reading ease, the scores plotted on the boxplot ranged from 0 to 50.

The blue box in Figure 6 displays the 25th to 75th percentile of the data known as the interquartile range, which was between 15 and 30 for reading ease scores. The letter X marks the median reading score of 23.8 while the red target shows the test value score of 60. In the final dataset, two reading ease score outliers remained: one document had a reading ease score of 66.8 and another 60.6. Both of these outliers are marked on the box plot by an asterisk symbol.

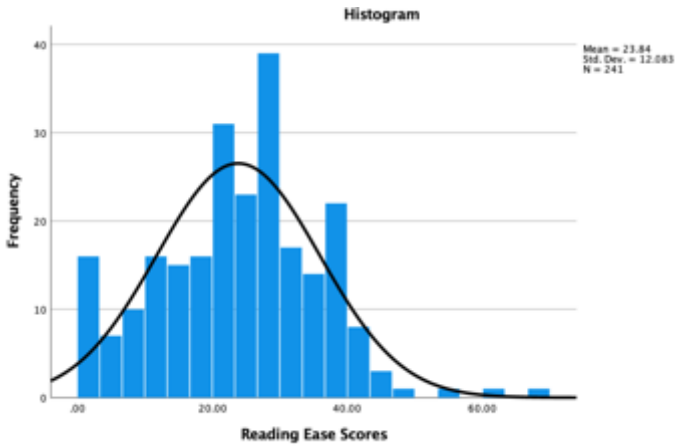
Figure 6. Boxplot of reading ease scores for Army human resources information.



Despite these two outliers in the final data set, reading ease scores still met the last assumption necessary for the one-sample t-test: the data was approximately normally distributed.

Figure 7, below, is a histogram of reading ease scores. It displays the bell curve associated with data which is symmetrically distributed around the mean. While the reading ease scores are not perfectly symmetrical around the mean, but instead skewed to the right, this distribution was determined to be sufficiently normal to meet the requirements of the one-sample t-test.

Figure 7. Histogram of reading ease scores.



Testing of Research Question One

The plain language study of Army human resources information was designed to investigate and answer two research questions, which were defined in Chapter 1. Research question one focused on reading comprehension.

Reading Ease Score Descriptive Statistics

The descriptive statistics for the reading ease scores are shown in Table 5 below.

Table 5. Descriptive statistics reading ease scores.

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error
Reading Ease	241	66.80	.00	66.80	23.8432	12.08328	146.006	.006	.157

Reading ease scores for the Army's human resources information ranged from 0.0 to 66.8. The mean reading ease score was 23.8. These averages represent scores suitable for readers with advanced education, as I describe below. As can be seen, the mean reading ease score (23.84 ± 12.08) was well below the population "normal" reading ease score of 60. A higher score suggests a document is easier to read and therefore more accessible to a wider audience.

Table 4, in Chapter 3 introduced Flesch-Kincaid reading ease and grade level scores. Table 6, below, shows just Flesch-Kincaid reading ease scores and puts these reading ease score results in context. Reading ease scores between 60 and 70 are considered to be plain language. The mean reading ease score of the Army's human resources information, which falls between 0 and 30, is best understood by college graduates. When compared to predicted reading ability, and established plain language guidelines, the Army's human resources information would not be easily understood by the average soldier.

Table 6. Flesch-Kincaid reading ease scoring.

90–100	Very easy to read. Easily understood by average 11-year old student.
80–90	Easy to read. Conversational English for consumers.
70–80	Fairly easy to read.
60–70	Plain English. Easily understood by 13 to 15-year-old students.
50–60	Fairly difficult to read.
30–50	Difficult to read.
0–30	Very difficult to read. Best understood by university graduates.

Reading Ease Score Results

A one-sample t-test was done to determine the statistical significance of the difference. Table 7, below, shows the results of the one-sample t-test.

Table 7. One-sample t-test of reading ease scores.

	Test Value = 60					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Reading ease	-46.453	240	.000	-36.15685	-37.6901	-34.6236

As can be seen from Table 7, the t-value of -46.45 with 240 degrees of freedom is statistically significant with $p < 0.05$. Since $p < = 0.05$, the null hypothesis can be rejected. This suggests support for the alternative hypothesis. There is a statistically significant difference between the mean Flesch-Kincaid reading ease score of the Army' human resources information and the mean reading ability of soldiers.

Therefore, it can be concluded that the difference between the reading ability of the soldiers (60) and the reading ease score of the Army's human resources information (24) is statistically significant. We can reject the null hypothesis and accept the alternative hypothesis.

There are implications for soldiers not being able to comprehend the Army's human resources information, both to individual soldiers' career advancement and the Army's efforts to recruit and retain qualified personnel. Jones and Williams (2017) found that poor writing prevents people from understanding guidance and thus blocks them from accessing benefits. This means that soldiers may not be able to follow steps to maximize the allowances, tuition, and retirement benefits they are entitled to. Unclear guidance likely has the greatest impact on the most junior soldiers who lack the experience and knowledge of more senior soldiers. There is also a loss of time, both for the soldiers who make additional phone calls and compose additional emails, and the HRC workers who must respond. This takes time away from other tasks both parties could otherwise be pursuing.

Clearly articulating benefits is also key to attracting and retaining a skilled workforce (Allen, Bryant & Vardaman, 2010). The Army as a whole and individual soldiers are harmed by not sharing plain language, or easy to understand information, about more lucrative military occupation specialties, how to obtain trade certifications, or access tuition assistance. This undermines the Army's talent management goal to recruit and develop a mobile workforce capable of seeking out advancement opportunities and promotions. If soldiers aren't aware of all of the opportunities the Army has to offer, they might make the decision to separate before their full twenty years to pursue a career outside of the military. The implications of poorly written human resources information continue even if soldiers serve their full twenty years since retirees must refer to the same guidance to access retirement, health, and education benefits.

In other words, the mean reading ease score of the Army's human resources information would have to be almost 40 points higher on the Flesch-Kincaid reading ease scale to be considered plain language, or easily understood by the average soldier. Only two such documents existed in the sample.

Grade Level Score Assumptions

The final data set (N = 242) for grade level scores also met all of the necessary assumptions in order to use the one-sample t-test. The target grade level, or test value score, was established as ninth grade based on DoD education data. As with reading ease scores, the dependent variables of grade level met the assumption of being measured at the interval level. There is also meaning to the differences between grade level scores. Documents which are considered to be the easiest to read on the Flesch-Kincaid test should be easily understood by a fifth grader, a more difficult document would be easily understood by a sixth grader, and so on.

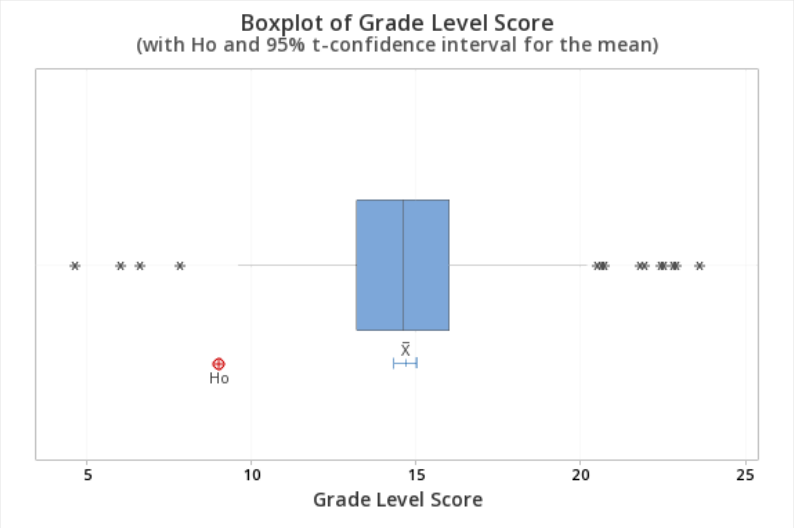
Grade level scores also met the requirement of independence of the data. Each of the documents utilized to generate grade level scores was selected randomly and there was no replacement of documents. In the final data set (N = 242), grade level scores of 24 and above were determined to be outliers. This was based on the reasoning, as previously discussed in Chapter 3 that for this study, the Flesch-Kincaid grade level score should only go up to 23 which represents a doctorate degree.

This led to the removal of six documents, with grade scores of 24, 24.8, 24.9 25.1, 26.5, and 29.2. One document was an extremely short one about an amendment to a policy. The other five each contained one very long paragraph that decreased the reading score and increased the grade level, skewing the document's scores. The Flesch-Kincaid reading ease test does not perform as well on very short passageways since there aren't enough syllables, words, or sentences to reliably calculate scores.

Figure 8, below, is a boxplot of grade scores which displays the difference between the level at which the Army's human resources information is written and the level at which it is predicted it should be written to be easily understood by the average soldier. It shows the distribution of the data in quartiles which range from 10 to 20. Grade level scores for the Army's human resources information ranged from 4.6 to 23.6.

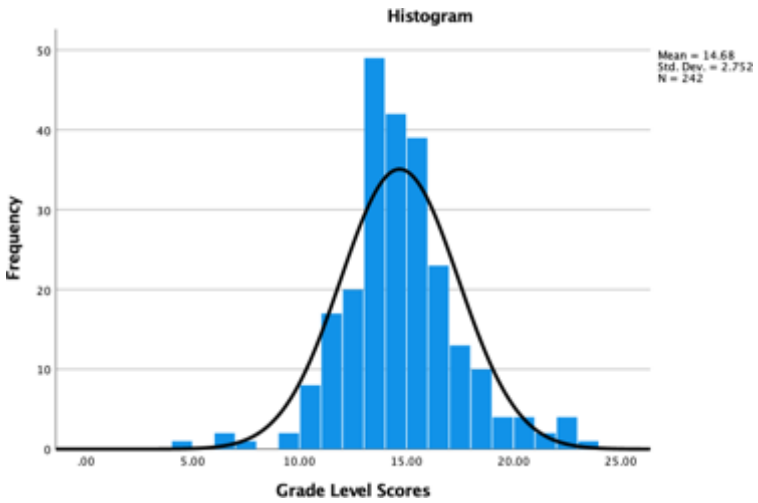
The blue box in Figure 8 displays the 25th to 75th percentile of the data, which was between 13 and 16 for grade level scores. The letter X marks the median grade level score of 14.7 while the red target shows the test value score of ninth. In the final dataset, seventeen grade level score outliers remained which are marked on the box plot by asterisk symbols. The majority of these outliers were clustered around grade levels 20, 21, and 23.

Figure 8. Boxplot of Grade Level scores.



Even with the inclusion of the remaining outliers in the final data set, grade level ease scores still met the assumption of normality which was necessary for the one-sample t-test. Figure 9, below, is a histogram of grade level scores. It shows the data was slightly left skewed. As with reading ease scores, the distribution was considered to be sufficiently normal to meet the requirements of the one-sample t-test.

Figure 9. Histogram of grade level scores.



Testing of Research Question Two

The plain language study of Army human resources information was also designed to investigate and answer the second research question, defined in Chapter 1, which focused on grade level.

Grade Level Score Descriptive Statistics

The descriptive statistics for the reading grade level are shown in Table 8 below.

Table 8. Descriptive statistics grade level scores.

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Std. Error
Grade Level	242	19.00	4.60	23.60	14.6756	2.75208	7.574	.275	.156

Grade level scores for the Army's human resources information ranged from 4.60 to 23.60. The mean grade level score was 14.676. As can be seen, the grade level score (14.68 ± 2.75) was higher than the population "normal" reading grade level score of 9.

Grade Level Score Results

A one-sample t-test was done to determine the statistical significance of the difference. Table 9 below show the results of the one-sample t-test.

Table 9. One-sample t-test of grade level scores.

	Test Value = 9					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Grade level	19.070	240	.000	14.84315	13.3099	16.3764

As can be seen from Table 9, the t-value of 19.070 with 240 degrees of freedom is statistically significant with $p<0.05$. Therefore, it can be concluded that the difference between the reading grade level of the soldiers (grade 9) and the average reading grade level of the Army's human resources information (grade 14) is statistically significant. Since $p <= 0.05$ the null hypothesis can be rejected. This suggests support for the alternative hypothesis which states that there is a statistically significant difference between the mean Flesch-Kincaid grade level score of the Army' human resources information and the mean reading grade level of soldiers, which is grade twelve. Table 10, below, defines Flesch-Kincaid grade level scoring and puts these results in context.

Grade level scores between eighth and ninth grade are considered to be plain language. The mean grade level score of the Army's human resources information is written at a college level which is considered difficult to read. Specifically, the reader would have to obtain at least one semester beyond an associate's degree to comprehend the information.

Table 10. Flesch-Kincaid grade level scoring.

5th grade	Very easy to read. Easily understood by average 11-year old student.
6th grade	Easy to read. Conversational English for consumers.
7th grade	Fairly easy to read.
8th & 9th grade	Plain English. Easily understood by 13 to 15-year-old students.
10th to 12th grade	Fairly difficult to read.
College	Difficult to read.
College graduate	Very difficult to read. Best understood by university graduates.

The Army's human resources information is written at least five grade levels above the average reading grade level of soldiers. The actual gap between the grade level at which these documents are written and the soldiers' average education level may be even greater.

People frequently read several grade levels below their actual grade completed. The implication is that while the Army might be publishing very useful, pertinent human resources

information, it may not be received and understood by all or most soldiers. Without clear, actionable guidance written at an appropriate grade level, soldiers may not be able to take advantage of the opportunities the Army is offering. This creates problems for both soldiers and HRC. The mean grade level score of the Army's human resources information does not appear to be written at a grade level that would be easily understood by the average soldier.

Conclusion

Army HRC documents are likely beyond the reading ability of the target audience. Across the randomly selected Army human resources documents (N = 242), mean reading ease scores were significantly lower (more difficult) than what this study predicted would be needed for information to be easily understood by the average soldier. Similarly, grade level scores were higher than what would be needed to match the average reading level of soldiers.

According to the literature, court rulings, and the Plain Writing Act, information that explains how to access a government benefit or service should be written in a way that is plain language, or accessible to the majority of people. In terms of the Flesch-Kincaid reading ease test, information should score between 60 and 70 which means it is written between an eighth and ninth grade level. For HRC's information, the mean reading ease score of 23.8 was almost 40 points lower than what is considered plain language. The mean grade level score of 14.8 was almost five grade levels higher than the plain language goal. At that grade level score, soldiers would have to hold at least an associate's degree to understand the Army's human resources information. As previously discussed, this gap might be even greater since reading comprehension is often several grade levels below the grade completed. Seventy-five percent of enlisted soldiers only hold a high school diploma or equivalent, which according to literacy research, means they would need information to be written below a twelfth grade level to make it accessible or easy to understand

(Department of Defense, 2016). That is why this study set the target grade level score at the ninth grade level.

The statistically significant and consistent results of the one-sample t-test for reading ease scores also suggests support for the alternative hypotheses for research question one. There is a statistically significant difference between the mean Flesch-Kincaid reading ease score of the Army's human resources information and the mean reading ability of soldiers. Likewise, the results of the one-sample t-test for grade level scores, which are also statistically significant and consistent suggest support for the alternative hypotheses for research question two. There is a statistically significant difference between the soldiers' average grade level completed and the average Flesch-Kincaid reading grade level of the Army's human resources information.

This disconnect between the level at which the Army's human resources information is written and the average educational attainment of soldiers' indicates that the Army is not communicating human resources information in a way which is understandable to all, or even the majority of soldiers. The Army is delivering necessary guidance through MILPERs and ALARACTS but that doesn't mean the average solider is actually receiving and acting upon the information.

As previously discussed, a lack of plain language guidance has the potential to negatively impact individual soldier's careers by causing them to miss out on promotion opportunities, benefits, training, and educational resources. Each new position comes with rank, experience, and training requirements. Soldiers must compete with other soldiers for promotions and pay raises which means missing key milestones could prevent them from achieving career advancement. Not enabling soldiers to capitalize on career opportunities hampers the Army's talent management goals of a mobile workforce with the "right soldier in the right place at the right time" and could cause frustrated soldiers to separate from the Army before they complete their full twenty years.

Beyond individual soldiers and the Army as a whole, there are implications for HRC specifically. Unclear written guidance leads to phone calls, e-mails, and social media messages from soldiers seeking additional clarification. This costs employees time and costs the organization money. While it is outside the scope of this study to determine the actual costs to HRC of unclear writing, previous studies have quantified cost savings for agencies which improved writing (Myers, 2013). As previously cited, the Navy forecasted a $250-350 million annual savings if all memos were written in plain language. After rewriting one form letter to make it easier to understand, the Veterans Administration decreased calls to a regional call center from 1,100 to 200 in just one year. In a comprehensive review of twenty-five separate studies, Kimble (1999) found significant cost savings through plain language initiatives. These findings have potential implications for theory, knowledge, practice, policy, and future research. This includes: encouraging the transfer of knowledge from practioners to communicators, filling a gap in plain language research; reinvigorating the Army's interest in plain language; finding ways to improve the clarity of the information HRC shares with soldiers; and spurring additional creative ideas and solutions.

Chapter 5: Conclusions, Interpretations, and Recommendations discusses the implications for both practioners and academics in further detail. The final chapter demonstrates how this study's findings enlighten the debate between the pluralist and pragmatic schools of thought that were presented in Chapter 2. The plain language movement has been advanced through pluralism–groups competing to influence knowledge production–but this study demonstrates, in Chapter 5, that pragmatism–academic researchers focusing on practical solutions–is what is needed to advance plain language. The debate between pragmatism and pluralism is explored through a discussion of this study's findings of the usefulness of readability formulas, the need to understand

soldiers' reading ability, and the necessity of a plain language checklist or guide rather than additional training for Army writers.

The recommendations section of Chapter 5 clarifies the connection between the results of this study and transfer theory. The theory, which was presented in Chapter 2, describes how academic knowledge is translated into management practice. Practical solutions to improve the readability of the Army's human resources information are also shared including an example of how to improve writing through a plain writing guide, or process map.

The objective of these recommendations is to establish a broader-based method for establishing readability standards and then evaluating the Army's content against those standards. The military has focused on literacy and readability formulas since the 1970s but appears to have lost momentum. The intention of this study was to reinvigorate the Army's focus on plain language to provide HRC with tools to more clearly communicate human resources information to all soldiers.

Chapter V

DISCUSSION AND RECOMMENDATIONS

Summary of the Problem

The Army's human resources information is readily available online. Yet on average HRC receives more than 950 calls and 150 e-mails per day from soldiers asking questions about human resources guidance, indicating that content is not easy to understand (Human Resources Service Center, 2018). The gap between the readability of information and the average education level of soldiers appears to be substantial.

Unclear human resources guidance is problematic for soldiers' careers, HRC, and the Army's recruiting and retention goals. Making benefits and career opportunities easy to understand is key to attracting, developing, and maintaining a skilled workforce. The problem is compounded by the Army's new blended retirement system which gives soldiers the option of retiring early without losing their entire pension.

The Army is focused on enhancing talent management, to place the right person in the right job at the right time, yet career, benefits, promotion, training, and education information is shared in wordy, jargon-filled documents. Not clearly articulating career opportunities undermines the Army's talent management goals and could lead to disenfranchised soldiers separating early from the military. Responding to queries and clarifying guidance also costs HRC in terms of employee's time and resources.

Focusing on developing plain language human resources information could benefit individual soldiers, HRC, and the Army. When soldiers are easily able to access training and

education opportunities they advance their own careers while fulfilling occupational specialties the Army needs to sustain its readiness and modernization goals. If soldiers can clearly recognize the financial benefits the military has to offer they are more likely to stay in the Army for the full 20 years. Increasing the clarity of human resources information has the potential to improve the Army by helping guarantee both a high quality military overall and retention of the best service members. To shed light on this problem, and explore a previously unexplored topic in plain language research, this study investigated two related research questions focused on reading ease and reading grade level.

Reading Ease Score Results

On the Flesch-Kincaid reading ease scale, a higher score suggests a document is easier to read and more likely to be easily understood. The Army's human resources information reading ease scores ranged from 0.0 to 66.80 with a mean reading ease score of 23.84. The results of the one sample t-test said that there was a statistically significant difference between the mean reading ease score of the Army's human resources information (24) and the mean reading ability of soldiers (60). The mean score would need to be almost 40 points higher on the Flesch-Kincaid reading ease scale to be considered easily understood by the average soldier. These results indicate that that the average soldier can't understand the Army's human resources information.

Grade Level Score Results

Grade level scores between eighth and ninth grade are considered to be plain language. The Army's human resources grade level scores ranged from 4.60 to 23.60 with a mean grade level score was 14.68. The results of the one sample t-test said that there was a statistically significant difference between the reading grade level of the soldiers (grade 9) and the average reading grade level of the Army's human resources information (grade 14). The mean grade level

score of the Army's human resources information is written at a college level despite the fact that the majority of soldiers only hold a high school degree or equivalent.

Findings in context of Plain Language Literature

This study and the interpretation of its results are grounded in several assumptions which are supported by the literature. First, that plain language information enables people to understand and act on information. Second, that readability formulas are an effective way of quantifying whether or not a document could be easily understood by a target audience. Third, that plain language human resources guidance is key to attracting and retaining employees. Finally, that the military's information should be written for actual and not theoretical high school graduates, which means at a ninth-grade level since the majority of people read several grade levels below the grade they have completed. Overall there is agreement between the findings of this study and the findings from previous researchers.

This study did not attempt to add to the body of literature on the need for, or the benefits of, plain language since that has been well established by previous researchers. Nor did it focus on the effectiveness of readability formulas since the use of these tools has been extensively debated by past researchers (Dubay, 2004). The tools themselves have been widely tested and validated. This study was conducted based on the assumption, from a vast body of research since the 1960s, that plain language information is more beneficial to consumers and government agencies and can be quantified through readability formulas.

The military is unique when it comes to plain language research. The majority of plain language studies have focused on how clearly government agencies communicate to external audiences. For example, the reading ease of public health guidance. The Plain Writing Act of 2010 mandated any documents needed to obtain a government benefit or service, or comply with a

requirement that the federal government administers or enforces, must be written clearly (Center for Plain Language, 2018). Unlike other government agencies which communicate guidance or information on benefits or services to the general public, the Army must focus on communicating to potential recruits and current soldiers. This is why, since the 1960s, the focus of plain language research for the military has been on how well the organization communicates with internal rather than external audiences. Like previous military-focused plain language research, this study also focused on communication to internal audiences: active duty and reserve soldiers. The key way this study deviated from existing military-focused plain language literature was by focusing on human resources guidance.

Unlike previous researchers (Harmon, 1989; Hegerfeld 1997), who focused on training and technical guidance to soldiers, this study examined human resources information from HRC. While previous plain language studies, outside of the military, have concluded that plain language guidance is beneficial to employees and organizations this study appears to be unique in examining the Army's human resources information. Previous authors (Harmon, 1989) conducted literacy tests with service members but since this research was more than twenty years old, this study also incorporated more recent data.

The assumption that human resources guidance should be written at an eighth- to ninth-grade level to be easily understood by soldiers was in line with previous, although not very current, research. A lack of contemporary research reinforced the need for this study since it may mean that the Army is making assumptions about the average reading ability and grade level comprehension of soldiers.

These assumptions, coupled with the results of this study which demonstrate that HRC's information is written above a high school level, leads to the question, what can be done to

improve the readability of the Army's human resources information? The theories underpinning this study provide a guide to improve the readability of HRC's information.

Implications for Theory

The results of this study have potential implications for theory, knowledge, practice, policy, and future research. These include: encouraging the transfer of knowledge from practioners to communicators; filling a gap in plain language research; reinvigorating the Army's interest in plain language; finding ways to improve the clarity of the information HRC shares with soldiers; and spurring additional creative ideas and solutions.

This study goes beyond the pluralism which helped create military-specific readability formulas to focus on a pragmatic approach to improving the readability of HRC's information. Kern (1980) writes that the military's focus on readability formulas diverted attention away from improving and developing other ways to create plain language content. This study utilizes transfer theory to translate findings and share a practical, real world solution with practioners. Previous researchers described the need for a communication medium to share information from academics to practioners. This is why this study advocates for a plain language checklist to improve the clarity of HRC's information. This method agrees with previous authors who called for translating research into practical solutions which managers could implement (Van de Ven & Johnson, 2006; Vogel, 2010).

This study did depart from the assumption made by some researchers that the military's unique jargon and acronyms make it impossible to apply existing readability formulas or lower the grade level of written information. Kern (1980) explains that the military's reliance on bureaucratese - technical jargon made up of multisyllable words posed a problem for clear communication. The military's belief that everyone is familiar with technical terms, jargon, and

acronyms promoted poor writing. Hooke, De Leo, and Slaughter (1979) described the practical problems associated with writing U.S. Air Force materials to a tenth grade level as being "insurmountable" as if implementing plain language was impossible. This study rejected the assumption that reading formulas cannot be used on military writing or that the Army should be exempt from plain language when writing for soldiers.

This unwillingness to translate jargon and acronyms, and an apparent lack of a mechanism to share academic research in a form practioners could use, undermined the military's efforts to implement plain language in the 1960s and 1970s. As was established in Chapter 2 with the example of communicators simplifying Basic Housing Allowance guidance, it is possible to rewrite human resources guidance to a grade level which soldiers should be able to understand. While there are obstacles to improving military writing, this study proposes a way to overcome these barriers through a plain language checklist to improve the readability of the Army's human resources.

Meaning of Results

The results of this study suggest that soldiers are not receiving human resources guidance in a way which is easy to understand. Previous researchers (Badarudeen & Sabharwal, 2010; McCray, 2005) established that people often read several grade levels below their actual grade level completed. Thus, the true gap between the grade level at which these documents are written and the soldiers' average education level may be even wider.

Without clear human resources guidance, written at an appropriate grade level, soldiers may not be able to take advantage of the opportunities the Army is offering. This creates problems for soldiers, HRC, and the Army as a whole in terms of career advancement, ability to access benefits, time wasted clarifying guidance, and recruiting and retention goals.

Potential Explanations for Results

There are numerous potential causes for the disconnect at which the Army's human resources guidance is written and the average reading ability of soldiers. These include a lack of emphasis on plain language; a lack of current guidance; staff turnover; documents being written by people who have not been trained in plain language; and, as discussed above, a pervasive culture of jargon, acronyms, and technical terminology in the military.

As previously discussed, while the military emphasized plain language research, conducting progressive research to develop new readability formulas, it appears that public health is now the focus of plain language research. To be clear, the Department of Defense does abide by the Plain Writing Act of 2010. It hosts a website dedicated to plain language with resources, tools, and training. Yet that does not guarantee the guidance is actually reaching the people who are producing HRC information. When the Plain Writing Act became law, the focus was on getting communicators trained not necessarily on the human resources specialists who produce the actual guidance HRC puts out. This means that the people who write Army human resources guidance may not have formal training or previous experience plain language or clear communication. This could lead to a lack of writing comprehension which translates into poorly written, unclear guidance for soldiers.

A lack of emphasis on plain language or availability of guidance or training for the people who produce HRC's documents is likely compounded by the military's reliance on highly technical terminology, jargon, and acronyms. Human resources guidance, which is written at a high grade level, is only made more confusing by jargon unfamiliar to soldiers, technical terms which are not clearly defined, and acronyms which are not spelled out. The causes of the results

produced by this study lead to consequences for individual soldiers, HRC, and the Army as a whole.

Implications of Results

The main consequence of human resources guidance being written above the reading ability of the average soldiers is simple–soldiers will not receive the information. Previous authors including Dubay (2004) established that when content exceeds people's reading ability they simply stop reading. The results of this study indicate that soldiers may not be able to utilize benefits, access educational opportunities, or take advantage of career opportunities. Soldiers not being able to understand guidance also likely translates into costs for HRC in terms of wasted time and productivity and the Army in not being able to meet its recruiting and retention goals. Not enabling soldiers to take advantage of career opportunities could cause frustrated soldiers to separate from the Army before they complete their full twenty years.

Unclear human resources guidance has the potential to negatively impact individual soldier's careers by causing them to miss out on benefits, training, and educational opportunities. Missing key milestones could translate into soldiers missing out on promotions and pay raises and thus prevent them from achieving career advancement. As was previously discussed in Chapter 2, access to plain language guidance also constitutes a social justice issue. While Jones and Williams (2017) define social justice more broadly, for the purposes of this study social justice means economic rights for soldiers.

Poor writing prevents people from understanding guidance and thus blocks them from accessing opportunities for career progression, pay increases, or benefits. Without easy to understand information soldiers with a higher education level and reading ability will have an advantage over other soldiers in terms of career prospects. Plain language human resources

information would help ensure that the majority of soldiers are at least given the opportunity to advance their educational, training, and career goals.

Unclear guidance likely has the greatest impact on the most junior soldiers who lack the experience and knowledge of more senior soldiers. Furthermore, the consequences of poorly written human resources information continue even after soldiers separate from the military since retirees must refer to the same guidance to access retirement, health, and education benefits.

Beyond individual soldiers and the Army as a whole, there are implications for HRC specifically. Unclear written guidance leads to phone calls, emails, and social media messages from soldiers needing clarification. This costs time both for the soldiers who make additional phone calls and compose additional emails, and the HRC workers who must respond.

Clearly articulating benefits is also key to attracting and retaining a skilled workforce. Not sharing plain language information, about more lucrative military occupation specialties, how to obtain trade certifications, or access tuition assistance harms individual soldiers and undermines the Army's talent management goals. The Army cannot successfully recruit and develop a mobile workforce capable of seeking out advancement opportunities and promotions if soldiers aren't aware of all of the opportunities the Army has to offer.

Recommendations

Implement Practical Guidance Grounded in Theory

Kern (1980) wrote that the military's focus on readability formulas diverted attention away from implementing measures to actually encourage plain writing. While readability formulas should play a role in developing plain language content, Kern advocated for a broader-based method to establish plain language standards and then evaluate content against those standards.

This is where pragmatism, in which academics study real-world problems and translate findings for practioners, comes into play. The DoD already has plain language training and guidance for its communicators but it could be that these resources have not gotten into the hands of all the employees who write the Army's human resources guidance. Numerous authors across HRC and the Army create the documents–the MILPERs and ALARACTs–which were used for this study and found to be written at a grade level above the average soldier's reading ability.

Improving HRC's writing will require an approach based on transfer theory in which academics share easy to understand guidance with practioners. This study advocates for a plain language checklist for all authors who are developing human resource guidance to reference. While not codified, HRC's communicators and public affairs staff follow an intrinsic plain language checklist when they are interpreting guidance for news stories and social media. The BAH example in Chapter 2 was an instance of communicators taking complex information written at a very high level and simplifying it to reach soldiers via web and social media. Unlike their human resources specialist colleagues, who may or may not have had formal training or experience in clear communication, the communicators are more familiar with writing for a general audience. They have been trained to write news stories, which according to industry standards, should be written between an eighth and tenth grade level. Perhaps without realizing it communicators translate complex information using plain language guidelines when they write for a general audience.

Plain language scores calculated with the Flesch-Kincaid Readability test need to be understood in the context of the average reading ability and grade level of the target audience. Literacy levels will vary amongst soldiers, but readers should be familiar with most of the language in documents written at or below their grade level. Since the average grade level of

soldiers is known, content can be reviewed and rewritten to match their needs. This is why this study recommends implementing a plain language checklist for HRC employees who write human resources guidance.

Plain Language Checklist

The recommendation to develop a plain language checklist for HRC employees to use while developing human resources guidance is grounded in recommendations from previous researchers. In 1980, as the Army was implementing a plain writing program, Kern advocated for the development of checklists that went beyond grammar, punctuation, spelling, and formatting to focus on function and organization. The Navy and Air Force had developed similar checklists and Kern believed the Army could adopt ones that focused on specific problems their writers encountered in conveying information.

Kern interviewed Army writers and found that most of them were subject matter experts or instructors with no formal training in technical writing which is likely also true for HRC employees. Writing is often an extra duty for employees which is why, rather than formal, time consuming training, Kern recommended providing aids for decision making and emphasizing understanding through examples.

While there is no guarantee that HRC employees will accept and use such a checklist it was developed in a format familiar to and thus more likely to be adopted by the military. The Plain Language Checklist in Appendix F. was developed based on guidance from the Plain Language Action and Information Network (2011) and adapted for HRC. Like other Army organizations, HRC utilizes process maps, which are planning and management tools that visually describe the flow of work. The Plain Language Checklist is loosely modeled after a process map and consolidates guidance onto one page with links to additional resources.

The checklist follows Kern's recommendation to develop guides which can be independently validated and then used to rewrite materials. Employees who are developing human resources guidance will first create content, second calculate both Flesch-Kincaid reading ease and grade level scores utilizing Microsoft Words, and third interpret the results.
If the reading ease score is greater than seventy and the grade level is below ninth grade, the writer will move onto the fourth step, completing a final plain language checklist prior to sharing the information with the audience. If the reading ease is below seventy and grade level is greater than ninth grade, the author will rewrite the information utilizing DoD and plainlanguage.gov guidance. After rewriting the information, the author will go back to the second step (recalculating reading ease and grade level scores) and the third step (interpreting the scores). Rewriting content should lead to a higher reading ease and a lower grade level score which will allow the author to proceed to the fourth and final step of the plain language checklist.

Most of HRC's employees have at one point in their careers served in the military. They must utilize the same human resources information they share with soldiers to access retiree or veterans benefits. It is highly unlikely that they are purposely writing information at a level higher than soldiers can understand. The people who write HRC's guidance probably believe that they are writing at an appropriate level for the average soldier understands. Given their familiarity with the information they may find it easier to understand and assume other people will be able to comprehend the content also. They may also be overestimating soldiers ability to understand unique human resources terminology and guidance. If the results of this study are shared with HRC employees to highlight the disconnect between the information they are producing and soldiers' reading abilities it is likely that they will be willing to try the checklist to improve their writing.

Constraints of Implementing a Plain Language Checklist

Yet, as with any new process, there could be difficulty in implementing the plain language checklist and unintended negative consequences including a lack of adherence to the guidelines or writing to the Flesch-Kincaid reading ease test. Numerous employees across HRC and the Army develop human resources documents and it might be difficult to reach all of them with the new Plain Language Checklist. As has been previously established, using specific terminology, jargon, and acronyms is ingrained in the military and authors could be hesitant to take what they may view as an additional step or extra work to do their jobs. The assumption that soldiers will or should understand technical language may also lead to authors rejecting the checklist.

However, none of these barriers are insurmountable. Through the use of transfer theory, the need for the Plain Language Checklist could be explained. Through training, the guidance could be shared in a way which makes it relevant to HRC authors and easy for them to use. The checklist relies upon the Flesch-Kincaid readability formula to help authors determine whether or not their information is written at a level that would be easily understood by soldiers. Readability formulas are not a perfect predictor of comprehension but they do provide an approximation of whether information is written at a level a target audience can easily understand. As previous authors have explained (Dubay, 2004; Zhou, Jeong, and Green, 2016) formulas give communicators a starting point to assess and then make changes to documents. Reading formulas have been criticized for variability in results but since writers will not be switching from one formula to another there should be consistency in the ability of the Flesch-Kincaid formula to predict soldiers' comprehension.

According to previous research (Armbruster, Osborn, and Davison, 1985; Instone, 2011) there is a risk that when authors write content to maintain a specific level of readability, it

becomes harder to understand. Simplifying vocabulary might involve substituting vague words for precise ones. The cost of using "easy" words could include some loss of meaning and ambiguity. Difficult words are occasionally necessary because they are the most precise way to describe a concept. When these difficult words are removed and replaced they could make the readability grade level higher while making the content itself more difficult to understand.

Another consequence of readability formulas arises if writers try to decrease the readability grade level of a text by making sentences shorter. Shortening sentences improves readability scores since many reading formulas are dependent on the number of syllables in words and sentence length. According to Davison and Bolt (1986) focusing on shortening sentences distracts a writer from other important considerations, such as organization and information that would be most important to a reader. Shortening sentences could also lead to dividing sentences and the removal of connective words such as "and," "but," "then," and "because." Previous research concluded that this could make information more difficult to understand because the reader must infer the missing connective words.

One unintended consequence of this study, and the implementation of a plain language checklist could be HRC employees "writing to the formula." Previous researchers have suggested that if an organization implements plain language formulas authors might begin to write to achieve a specific score (Connaster, 1999; Schriver, 2000) and produce information that does not make sense. However, these critics were researching the publication of textbooks in which writers were paid to meet certain specific parameters. Research was not done on government agencies which are tasked with communicating to the public and utilizing readability formulas as one part of an approach to improve writing. Furthermore, if HRC employees begin "writing to the

formula" to achieve a higher readability score and a lower grade level score the unintended consequence might actually be easier to understand information.

This study does account for the consensus in the plain language literature that readability formulas can only approximate grade level and that it is beneficial to use more than just scores to predict comprehension. Readability formulas don't look at the formatting of content even though information is easier to understand when it is presented with headings, columns, tables, bulleted lists, and includes white space as opposed to one lengthy portion of text. Thus, the fourth step in the Plain Language Checklist requires completion of a final checklist which focuses on aspects of plain language which readability formulas can't account for:

- Including a title which describes the content
- Ensuring the main message is first
- Including headings to guide the reader
- Using bold font and highlighting sparingly
- Avoiding underlining since it looks like hyperlinks
- Avoiding unnecessary capitalization
- Only using all CAPS for acronyms and initialisms
- Spelling out acronyms on first use
- Avoiding jargon and using simple, familiar words and phrases
- Only including adjectives and adverbs which actually add meaning
- Using Arabic numerals for numbers greater than ten
- Ensuring content is written in the first person and uses you, we, etc.
- Using active voice instead of passive voice
- Ensuring the same parallel grammatical structure for related ideas

- Using vertical lists, bullets, and numbering
- Breaking up chunks of information and including white space
- Including links to more information
- Having someone unfamiliar with the topic review the document for comprehension

There are alternatives to formulas, such as usability testing, but only readability formulas can offer a simple, objective prediction of plain language. In terms of pragmatism, readability formulas are the easiest, quickest, and most effective way to predict whether information is easy or difficult to read. For these reasons this plain language study recommends the use of the Flesch-Kincaid readability formula as the basis of the Plain Language Checklist. Readability scores will give HRC employees a baseline to determine how easy their information is to understand. The final checklist provides specific, concrete steps to take to enhance plain language.

It is worth noting that there are companies such as Transcend Translations (2019) which can be hired to rewrite and redesign documents and plain language software beyond Microsoft Word including Hemingway Editor and WriteClearly (Pettitt, 2020). Utilizing a company to improve the clarity of the Army's human resources documents could lead to short term benefits including making information easier to understand or providing HRC employees examples of plain language documents.

Long-term, without training HRC employees or introducing a new process for improving plain language, using an outside company would not address the underlying issue of documents not being written clearly in the first place. The benefit of applications such Hemingway Editor is the ability to highlight specific portions of a documents which need to be rewritten and why such as the use of passive voice or complex words. This software could, over time, help employees improve their writing by addressing recurring issues. HRC could explore the costs of hiring an

outside consulting company or purchasing additional software to improve plain language, but this needs to be coupled with a solution such as the Plain Language Checklist to improve the way documents are created.

Future Research

This study fills two gaps in plain language research. First, by focusing on military writing, which does not appear to have been heavily researched since the 1980s. Second, by focusing on the military's human resources guidance, which was not the focus when the military conducted the majority of its previous plain language research. The Army human resources plain language study was designed to provide a baseline understanding of whether or not HRC information is written at a level which is understandable to the average soldier. Future research could focus on filling the gap of present-day research on soldier literacy, usability testing to corroborate results from this study, and additional usability testing to gauge the effectiveness of the Plain Language Checklist. Additionally, after implementing the checklist a follow on study, similar to this one could be conducted to determine if there was any change in overall readability scores of HRC documents.

As numerous authors have pointed out, readability formulas cannot account for all aspects of plain language. Reading ease formulas don't consider individual readers but instead provide a prediction of the ability of a population to understand content. Formulas don't consider cultural factors such as race, ethnicity, socioeconomic status, etc. which might lead people to interpret what they read differently or impact comprehension. The formulas are also based on subjects who are native-born English speakers. This means that English as a second language soldiers may struggle to understand content even if they have reached the recommended grade level for readability (Dubay, 2004).

Readability is not a guarantee of comprehension which also depends on a reader's familiarity of the topic, not just the grade level at which a document is written. Soldiers who are unfamiliar with a topic, or are reading about a topic for the very first time, might have difficulty understanding the information even if it is written at an appropriate grade level. On the other hand, if soldiers are familiar with a topic including its unique jargon and acronyms, they might be able to comprehend information written at a higher grade level.

This study approximated soldiers' reading ability based on education data, since up to date literacy research did not exist. Yet as has been discussed before, grade level completed does not necessarily mean being able to read at that grade level. Future research could re-examine soldiers' literacy through testing. A clearer understanding of soldiers' true reading ability could help the Army reading ease and grade level score requirements for written documents.

Future research could also explore usability testing with groups of soldiers to gauge comprehension of existing HRC documents. Rather than using Cloze testing, as plain language researchers did in the 1960s and 1970s, having readers fill in missing words to gauge comprehension of a document, the military could conduct plain language focus groups. Soldiers could be given human resources guidance and then asked questions to measure true understanding. For example, what is the main point of this document? Does this information apply to you? What steps do you need to take to access this benefit? Where do you go to find more information? Based on the soldiers' answers researchers could determine true comprehension of HRC content. Usability testing could find that soldiers are able to understand HRC documents written at a higher level than this study predicts. Or usability testing might reveal that the gap between the grade level at which documents are written and what soldiers need to easily understand the information is even greater than what this study predicted.

The most important future research would need to be conducted after implementation of the Plain Language Checklist to determine if the checklist was actually being used and if it improved the readability of content. HRC staff could be surveyed to determine whether they implemented the checklist and whether they found value in it. A survey or interviews with employees could also lead to improvements to the checklist, fulfilling the collaborative nature of engaged scholarship theory.

Usability testing could be also be done on the original versions of HRC documents followed by testing of content that had been rewritten using the Plain Language Checklist. This would enable researchers to measure whether soldiers' understanding increased after the documents were rewritten for plain language. If the documents which were rewritten were easier to understand this could also increase acceptance of and use of the checklist by employees.

While usability testing with soldiers would be the most preferred method of measuring the impact of the Plain Language Checklist, that may not always be feasible. Instone (2011) recommends combining the Flesch-Kincaid test with a check from subject matter experts to determine if information is actually easy to understand as a workaround to usability testing.
A study similar to this one could also be replicated with a random sampling of HRC documents selected after implementation of the Plain Language Checklist. The study would need to use the Flesch-Kincaid formula since results can vary amongst readability formulas. This could help researchers determine whether there was a statistically significant difference in readability scores of HRC's documents after the implementation of the checklist in order to infer if the checklist was making a meaningful difference.

Further data could also be gathered from the Army's Human Resources Service Center which tracks the number of phone calls and e-mails HRC receives. Kimble (1999) found

significant cost savings for organizations which implemented plain language initiatives. HRC could see a drop in queries after implementing the Plain Language Checklist and making its information easier to understand.

Beyond additional research on the effectiveness of the Plain Language Checklist, the findings of this study could be related to or compared to conclusions drawn in the public health arena since that is where majority of recent plain language research has occurred. The argument for designing military-specific readability formulas in the 1960s was based on the military's unique culture and way of communicating. An additional study could find parallels between how soldiers want to receive information and how people want to receive public health information. Additionally, both the military and public health practioners share information based on common themes such as protecting health and safety, taking advantage of services, and accessing individual benefits. The Army could leverage existing public health research and findings to improve the way it communicates with soldiers, especially if it is willing to decrease its reliance on acronyms and jargon.

This study's findings clearly endorse pragmatism and transfer theory. As was discussed extensively in the literature review, the military as a whole and the Army specifically have studied and focused on clear communication. The issue with previous research was that it lacked a mechanism to translate findings in a manner that was easily accessible to Army communicators. Improving readability formulas and establishing the Army Writing Program did not go far enough to put user-friendly plain language guidance in the hands of Army writers. This study began with the objective, grounded in pragmatism, of researching and developing and easy-to-use plain language checklist which could be shared, through transfer theory with Army communicators.

Conclusion

In 2019 HRC redesigned its website, utilizing plain language guidelines to make it more user friendly and easier to navigate. The redesign of HRC's website indicates a willingness and desire to make information easier to access and understand. Similar to the role HRC communicators play in translating human resources guidance, the website is a conduit to help soldiers find the information they need. While the website redesign is an important step in the right direction, individual soldiers, HRC, and the Army as a whole will not benefit until human resources guidance is actually written at a level that soldiers can understand. Implementing the Plain Language Checklist could compliment the redesign of HRC's website by ensuring that soldiers reach guidance that is easy to understand.

The more than one million active duty and reserve soldiers who rely on the Army's human resources information to make decisions about benefits, assignments, promotions, training, and education opportunities deserve plain language information. The information HRC shares is complex, time-sensitive, and usually requires soldiers to act. Soldiers can only take advantage of career prospects if they understand the guidance the Army shares.

The Army can only meet its recruiting and retention and talent management goals if it enables soldiers to take advantage of promotion opportunities with easy to understand information. Plain language human resources information which clearly articulates benefits, career, training, and education guidance will benefit the military as a whole. To meet its readiness and modernization goals the Army must ensure it is doing everything possible to attract and retain highly qualified and motivated soldiers. As an organization the Army must position itself to compete with the private sector in order to convince soldiers to stay and serve a full twenty years. Each soldier represents an investment in terms of time, resources, and money. It is in the Army's

best interests to retain soldiers as long as possible. Focusing attention on creating plain language human resources guidance would help guarantee a higher quality military overall and retention of the most qualified and highly trained service members.

Furthermore, HRC can only be at its most efficient if it is not spending valuable time clarifying guidance that has already been published. Improving the clarity of human resources information has the potential to free up communicators to focus their energy and attention on developing new, creative ways to share information. New initiatives have the potential to reach existing soldiers and even attract potential soldiers with information about the benefits of being in the Army. The Plain Language Checklist is a pragmatic solution to potentially improve the Army's human resources information which benefits individual soldiers, HRC, and the Army as a whole.

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APPENDIX A:

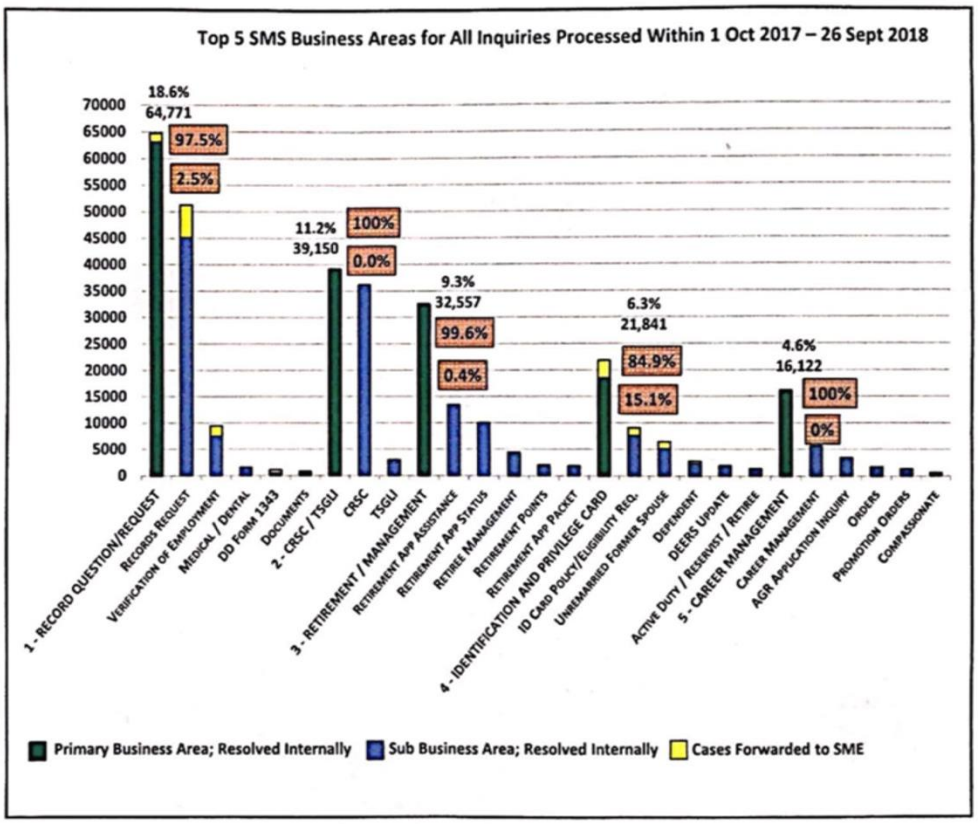
Figure 1: Army Human Resources Service Center Inquiries

HRSC (Contractor) Command Stats

1 Oct 2017 – 26 Sept 2018	
Inquiries by Component	
Active	17.0%
USAR	29.2%
ARNG	3.4%
Retired	27.4%
Veteran / Other	23.0%
Inquiries by Type	
Phone	232,904
Mail	151,642
Email	38,381
Walk In	8,550
Total	431,477

- Average 951 calls per day
- Average 157 emails per day
- 8.8% Abandon rate

As of: 27 September 2018



(Human Resources Service Center, 2018)

APPENDIX B:

Institutional Review Board Approval

Valdosta State University

APPLICATION FOR USE OF HUMAN PARTICIPANTS IN RESEARCH

EXEMPT APPLICATION

INSTRUCTIONS: Complete all required information, and check appropriate boxes. Attach all CITI training documents, answers to questions 12–15, and obtain all required signatures before submitting to the Office of Sponsored Programs & Research Administration.

Project Title: Plain Language Study of U.S. Army Human Resources Information **Project Dates: 01/01/2018 to 05/04/2020**
MM/DD/YYYY MM/DD/YYYY

Responsible Researcher: Nicole Margaritha Hawk
Mailing Address: 2519 Broadway ST APT 102 San Antonio, TX 78215
Department: Public Administration
Email: nmhawk@valdosta.edu
Telephone: 210-416-2360

Minimum # of Participants: N/A
Maximum # of Participants: N/A
External Funding: ☐ Yes ☑ No
If Yes, Sponsor: N/A
(Note: If research will be externally funded, include a copy of the proposal or award that describes use of human participants.)

Supervising Faculty: Dr. Bonnie Peterson
Supervising Faculty Email: bepeterson@valdosta.edu

Researcher's Status:
- ☑ **FT/PT Faculty**
- ☐ **Adjunct Faculty**
- ☐ **Research Associate**
- ☐ **Administrator/Staff Member**
- ☐ **Graduate Student**
- ☐ **Undergraduate Student**
- ☐ ***Unaffiliated Investigator**

Co-Investigator	Institutional Affiliation	Email Address	*IRB FWA #

Note: Unaffiliated Investigators must fill out the last column **IRB FWA #** and complete the **Unaffiliated Agreement** form at the link below:
http://www.valdosta.edu/academics/graduate-school/research/office-of-sponsored-programs-research-administration/institutional-review-board-irb-for-the-protection-of-human-research-participants.php

1. ☑ YES ☐ NO Does your proposed study meet the Valdosta State University Institutional Review Board definition of research and/or does it involve a condition for IRB oversight as stated below?

***VSU IRB Definition of Research*:** Valdosta State University defines research as a systematic investigation, including research development, testing, and evaluation designed to develop or contribute to generalizable knowledge.

The following **conditions** may not meet the definition of "research" as provided; however, may cause your research to be subject to IRB oversight:
- Intent to produce results that will be submitted for peer-reviewed publication or presentation
- Include minors (e.g. those under the age of 18)
- Target potentially vulnerable individuals
- May place pregnant women and/or fetuses at risk of physical harm
- Deal with a topic of sensitive nature in a way which anonymity cannot be sustained
- Involve any activity that places the participants at more than minimal risk (see Question 10 for definition of "minimal risk")

2. ☐ YES ☑ NO Are the human participants in your study living individuals?

3. ☐ YES ☑ NO Are you collecting information about deceased persons that may put third parties (i.e., surviving spouses and/or living descendants) at more than minimal risk of harm?

4. ☐ YES ☑ NO Will you obtain data through intervention or interaction with living or third party individuals?
"Intervention" includes both physical procedures by which data are gathered (e.g. measurement of heart rate of venipuncture)
"Interaction" includes communication or interpersonal contact between the investigator and participant (e.g. surveying or interviewing)

5. ☐ YES ☑ NO Will you obtain identifiable private information about these individuals?
Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place. Identifiable means that the identity of the participant maybe ascertained by the investigator.

6. EDUCATIONAL REQUIREMENTS: In accordance with federal regulations, the VSU IRB requires all responsible researchers, co-investigators, faculty advising student research, and unaffiliated investigators to complete the CITI educational program.
Please visit: http://ww.citiprogram.org to complete the *IRB Basic* course.

Additional modules may be required for specific types of research. Please check all that apply and complete the corresponding modules.

Study population targets	Additional CITI Modules Required
☐ a. Minors (under the age of 18)	Research with Children
☐ b. Public School Children	Research in Public Elementary and Secondary Schools
☐ c. Pregnant Women	Vulnerable Subjects
☐ d. Prisoners	Research with Prisoners
☐ e. Potentially vulnerable individuals (those whose consent maybe compromised due to socio-economic, educational or linguistic disadvantage.)	Research with Protected Populations
☐ f. Individuals in foreign countries	International Research
☐ g. Individuals from different cultures or individuals from a particular racial/ethnic group	Group Harms: Research with Culturally or Medically Vulnerable groups
☐ h. Individuals about whom data will be collected from records (e.g., educational, health, or employment records)	Records-Based Research
☐ i. Individuals from or about whom Private Health Information (PHI) subject to HIPAA compliance will be collected	HIPAA and Human Subjects
☐ j. Individuals from whom information will be collected via Internet	Internet Research
☐ k. VSU Employees	Workers as Research Subjects

7. Does the primary researcher, co-investigator, or other key person, have a potential or actual financial conflict of interest in performance of the research? ☐ **YES** ☑ **NO**
If *YES*, it is required that the researcher completes the CITI module "Conflicts of Interest in Research Involving Human Subjects" and complete the VSU Conflict of Interest form available at: http://www.valdosta.edu/grants/forms.

8. As a researcher you are expected to follow VSU's code of ethics. Will there be an additional code of ethics followed? **N/A**
Include organization's name & Web address:

9. Name and location of external organization(s) providing research participants (attach letter(s) of permission/cooperation) **N/A**

10. Does the study present more than minimal risk to the participants? **YES** ☑ **NO** **UNCERTAIN** ☐

"Minimal Risk" means that the risk of harm or discomfort anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during performance of routine physical or psychological examinations or tests. Note that the concept of risk includes psychological, emotional, or behavioral risks to employability, economic well-being, social standing, and risk of civil criminal liability.

11. Federal Regulations permit the exemption of some types of research from IRB Committee review. From the categories listed below – select the category that describes your research study. Note: Studies involving *fetuses, pregnant women, or prisoners* are not eligible for exemption**.**

☐ **Category 1:** Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods**. 45 CFR 46.104(b)(2), does not permit involving children (under 18) in survey or interview procedures, per subpart D.**

☐ **Category 2: This exemption is not applicable to research involving minors.**
Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), **survey procedures, *interview procedures*, or observation of public behavior (including visual or auditory recording) if the following criteria is met:
(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).
Note: **VSU's IRB** interprets this category to include – but not limited to, non-invasive experimental research studies on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior.
45 CFR 46.104(b)(2), for research involving survey or interview procedures or observation of public behavior, does not apply to research with children, subpart D, except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.

☐ **Category 3: This exemption is not applicable to research involving minors.**
(i) Research involving benign behavioral interventions (BBI) in conjunction with the collection of information from an **adult** subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and the following criteria is met: The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).
(ii) Benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on

the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing.
(iii) If the research involves deceiving the subjects regarding the nature or purposes of the research, this exemption is not applicable unless the subject authorizes the deception through a prospective agreement to participate in research in circumstances in which the subject is informed that he or she will be unaware of or misled regarding the nature or purposes of the research. (45 CFR 46.104 (d)(3)(i)).

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Supervising Faculty

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12. In lay terms, what are the objectives of the proposed research?
Researching content shared by the U.S. Army Human Resources Command (HRC) to determine how plain language the information is will help determine if Soldiers needs are being met in terms of ability to understand and act on human resources information.

HRC determines the career path of more than one million Active Duty, Reserve, and National Guard Soldiers by placing, deploying and transitioning each Soldier along with their families. Selection boards control career tracks and training opportunities. Promotion boards determine increases in rank which lead to pay raises.

Almost daily, HRC shares information with Soldiers which could vastly impact their career and earning potential, convincing them to either stay in or leave the military. To help Soldiers make informed career decisions HRC must ensure messages match the education and literacy levels of the U.S. Army. Content must also be engaging, graphically appealing, and concise in order to cut through the information overload of digital and social media. Analyzing HRC content for plain language and readability would help determine if messages are shared in a way that enables Soldiers to act.

13. Describe how the participants and/or data will be collected. Attach copies of posters, brochures, flyers, and/or signed letters of cooperation. Briefly describe the consent process utilized for this research.
Data for this study will be derived from content published on the HRC website and social media accounts and from web and social media analytics. There will be no data collected from human participants in the study.

14. Describe the research methodology. Attach all questionnaires, assessments, and/or focus group questions. If questionnaires or assessments will be developed during the research project please indicate the general nature of the questions in an attachment.
The U.S. Army primarily shares personnel and human resources related information with Soldiers through Military Personnel Action Messages, or MILPERS and All Army Activity Messages, or ALARACTs which are published on the HRC website. For the purposes of this study, the content of select MILPERs and ALARACTS from 2012 to 2017 will be evaluated for plain language using the Flesch-Kincaid readability test.

A comparison between the mean plain language scores of HRC content and the mean reading ability of Soldiers would help determine if messages are shared in a way that empowers receiving, comprehending, and acting on information. Depending on the results of the analysis, recommendations could be made to make HRC content more accessible per plain language guidance.

15. Describe how you will insure the privacy of participants and the confidentiality of the information about them, including how and by whom the date will be collected, managed, stored accessed, rendered anonymous, and destroyed.
Not applicable: the only data being analyzed will be content published in MILPER or All Army Activity Messages on the HRC website, press releases, and/or social media pages.

APPENDIX C:

Table 2: Most visited HRC Web Pages and Most Popular Social Media

	Topic	Unique Visitors	Page Visited
1	Enlisted Promotions	2,364,826	Enlisted Promotions
2	Evaluations	1,419,883	Evaluation Systems Homepage
3	HR Tools & Systems	1,228,285	Tools and Applications Directory
5	Officer Promotions	765,833	Officer and WO Selections and Promotions
6	Selection Boards	755,086	Boards and Selections
7	Enlisted Promotions	560,850	MONTHLY CUTOFF SCORES AND SGT SSG BY-NAMES
8	Enlisted Career & Assignments	550,346	Enlisted Personnel Management Directorate
9	Officer Career & Assignments	500,752	Officer Personnel Management Directorate
10	Records	487,207	iPERMS Access
11	Enlisted Promotions	475,338	SENIOR ENLISTED PROMOTIONS
12	Records	399,973	Army Soldier Records Branch - ASRB
13	Selection Boards	381,953	ACTIVE OFFICER SELECTION BOARDS
14	Selection Boards	288,056	Selection Boards
15	Selection Boards	287,734	RESERVE OFFICER SELECTION BOARDS
16	Officer Promotions	220,867	Active Officer Promotion Information
16	Selection Boards	210,827	AC Senior Enlisted Selection Board Results
17	Selection Boards	151,829	Chief Warrant Officer Selection Board Results
18	Enlisted Promotions	149,850	FY17 SFC AC Promotion List
19	Photos	113,202	DA Photo - DAPMIS

20	Awards and Decorations	102,280	Awards and Decorations Branch
21	Selection Boards	101,824	FY17 Army Selection Board Schedule
22	Evaluations	98,830	instructions for access and testing on new evaluation entry system
23	Selection Boards	87,456	FY18 HQDA BOARD SCHEDULE
24	Retirement	82,349	Reserve Component Retirements
25	Enlisted Promotions	80,149	FY17 SFC AC Considered Selected.pdf

Top Twenty-five Most Visited go.usa.gov short URLS in 2017 (Human Resources Command, 2017).

	Topic	Clicks	Title	Short URL
1	Benefits	61,626	Army.mil article about BAH rates and required documentation. Posted by MSG Hamilton.	https://go.usa.gov/xncva
2	Recruiting & Enlisting	25,205	ARNEWS: Despite challenges, Army won't lower enlistment standards	https://go.usa.gov/xnghB
3	Enlisted Promotions	23,048	AC & AGR/RC Senior Enlisted Selection Board Results: https://www.hrc.army.mil/tagd/enlisted%20promotions	https://go.usa.gov/xXnGE
5	Promotions	20,629	MILPER 17-251: FY17 Regular Army (RA)/United States Army Reserve (USAR) Active Guard Reserve (AGR) SFC Promotion Selection List	https://go.usa.gov/xRprm
6	Enlisted Promotions	18,614	CORE: ARNEWS SEMI-CENTRALIZED (ROBUST) PROMOTION LIST #1 - Army Directive signed 7 DEC 2017	https://go.usa.gov/xnnSr
7	Casualties	17,937	HRC (MSG Hamilton): To honor the fallen: inside the Dover Port Mortuary	https://go.usa.gov/xnWrC
8	HR Tools and Systems	17,052	IPPS-A Information paper about the SRB. -MSG Hamilton	https://go.usa.gov/xn3pd
9	Security Force Assistance Brigades	16,921	CORE (10-20-2017): 1st Security Force Assistance Brigade Soldiers conduct tactical convoy training	https://go.usa.gov/xnYrb
10	Native American Heritage	16,309	CORE: Army jumpmaster takes pride in Native American heritage	https://go.usa.gov/xnDgR
11	Recruiting & Enlisting	15,027	CORE: Milley says no reduction in standards to meet recruiting goals	https://go.usa.gov/xnZJN
12	Benefits	14,425	ARNEWS on BAH: SOLDIERS WITH DEPENDENTS REMINDED TO KEEP RECORDS UP TO DATE	https://go.usa.gov/xnYFC

13	Bonuses	11,639	ARNEWS CORE: New incentives bundled into Selective Retention Bonus program changes	https://go.usa.gov/x5zAb
14	Modernization	10,669	CORE: MODERNIZATION WORTH EFFORT SAYS ACTING SECARMY McCARTHY	https://go.usa.gov/xnWU4
15	Security Force Assistance Brigades	9,591	CORE: 1st Security Force Assistance Brigade conducts live-fire	https://go.usa.gov/xnNXP
16	Casualties	9,482	Honoring the Fallen: Inside the Joint Personal Effects Depot at Dover AFB, by MSG Hamilton	https://go.usa.gov/xnTe6
16	Selection Boards	8,773	HRC on CORE: HRC addresses Board File preparation in Facebook outreach to field	https://go.usa.gov/xNXnN
17	Leadership	8,770	HRC HOME PAGE: Bennett welcomed as the Army's 61st Adjutant General	https://go.usa.gov/xRJYN
18	Modernization	8,701	HRC HOME PAGE - OCPA STAND-TO: BUILDING THE FUTURE FORCE	https://go.usa.gov/xnc7D
19	Selection Boards	8,476	Fiscal Year 2017 (FY17) Captain (CPT), Operations (OPS), Operations Support (OS) and Force Sustainment (FS) Selective Continuation (SELCON) Board	https://go.usa.gov/x9yJm
20	Hispanic Heritage	8,382	ARNEWS SFC LEMUS PROFILE - 2017-09-18 for Hispanic Heritage Month	https://go.usa.gov/xRtfX
21	Awards & Decorations	8,055	National Guard Bureau: New Org Badge Authorized	https://go.usa.gov/xnEKV
22	Veterans	7,316	Core: Vietnam Vet Focuses On Those Who Did Not Return	https://go.usa.gov/xnD49
23	HR Tools and Systems	7,051	SOES Milconnect site- MSG Hamilton	https://go.usa.gov/xnCyr
24	Officer Career & Assignments	6,879	ARNEWS: Enlisted Aide Program offers career-broadening experience for NCOs	https://go.usa.gov/xRpwh
25	Promotions	6,391	Soldiers can view promotion results in the field, on smartphones	https://go.usa.gov/x9Exs

Top Twenty-five HRC Facebook posts in 2017 (HRC, 2017).

	Topic	Lifetime Post Total Reach	Lifetime Post Total Impressions	Post Message
1	Enlisted Promotions	383,471	910,900	US Army Human Resources Command will post the official release of the FY17 Regular Army (RA)/United States Army Reserve (USAR) Active Guard Reserve (AGR) SFC Promotion Selection List at 07:30 EDT on Tuesday 15 AUG. See MILPER 17-251 for details and points of contact: https://go.usa.gov/xRprm (CAC/DS Logon only).
2	Promotions	43,740	338,446	US Army HRC Town Hall Live 16 May 2017
3	Benefits	31,527	218,250	The Army now requires supporting documentation for BAH with-dependent rates to be loaded into iPERMS, Find out more at http://go.usa.gov/xncva
4	Enlisted Promotions	28,346	248,452	The FY17 RA/USAR/AGR Master Sergeant Promotion Selection List has been published and can be viewed by going to https://go.usa.gov/xXnGE (CAC/DS Logon only).
5	Officer Promotions	24,632	46,257	+++ CW3-CW5 PSB RELEASE DELAY +++ HEADS UP TO ALL CONCERNED – Posting date for the FY17 ACTIVE CW3-CW5 Promotion Selection Board lists HAS BEEN DELAYED. HRC will post the expected release date here AS SOON AS POSSIBLE. We apologize to the field for the postponement.

6	Enlisted Promotions	4,519	137,146	U.S. Army Human Resources Command has posted the official release of the FY17 Regular Army (RA)/United States Army Reserve (USAR) Active Guard Reserve (AGR) SFC Promotion Selection List. Congratulations to all those selected! https://www.hrc.army.mil/asset/18400 (CAC/DS Logon only).
7	Recruiting & Enlisting	7,739	124,252	Are you recently separated from the #USArmy? Thinking about maybe getting back in uniform? Take note that U.S. Army Recruiting Command now has more prior service openings to fill than any time in recent history AND is offering bonuses for some ranks and MOSs. If you're interested, find your local recruiter at http://www.goarmy.com/locate-a-recruiter.html and ask for details.
8	Enlisted Career & Assignments	5,694	126,351	U.S. Army Human Resources Command has announced that active duty Soldiers currently serving in Primary Military Occupational Specialty (PMOS) 38B in the rank of Staff Sergeant and below are encouraged to volunteer for reclassification into their Secondary Military Occupational Specialty (SMOS) or any shortage MOS for their current rank. If the desired number of reclassifications out of MOS 38B is not achieved in 90 days from the date of this message (10 OCTOBER 2017), HRC will execute mandatory reclassifications IAW the needs of the Army. Soldiers should contact their servicing or installation career counselors for guidance. See MILPER 17-322 for details on reclassification, exemptions and retirement options:

				https://go.usa.gov/xnaBh (CAC/DS Logon only).
9	Army Birthday	1,438	124,970	Happy #ArmyBday! As we stop to reflect on #USArmy's 242nd year of service to our nation, we think about the courage, fortitude and the incredible legacy of Soldiers who have answered the call to duty for generations, and for those yet to serve on future battlefields. U.S. Army Human Resources Command
10	Officer Promotions	9,133	99,675	U.S. Army Human Resources Command has released the Fiscal Year 2017 (FY17) Active Component (AC), Lieutenant Colonel (LTC), Operations (OPS), Operations Support (OS) and Force Sustainment (FS), Promotion Selection Boards (PSB): http://go.usa.gov/3S8UF (CAC/DS Logon only).
11	Education	6,954	80,844	Hey, Soldier! Wondering about your next assignment? What about STEP, the education you need to get promoted? Tune out the chatter and GET IT RIGHT FROM HRC when U.S. Army Human Resources Command's Senior Enlisted Leader, CSM Wardell Jefferson, hosts a Live Facebook Town Hall, Tuesday, March 7, beginning at 1 p.m. EST. Tell your buddies, submit your questions, and tune in for the most up-to-date facts from the most authoritative sources in Army personnel management. Join us at https://www.facebook.com/ArmyHRC and GET IT RIGHT FROM HRC!
12	Officer Promotions	6,785	88,383	U.S. Army Human Resources Command is scheduled to release results of the FY 2017 Active Component, Captain, Army Competitive Category Promotion Selection Board at 07:30 EDT on

				AUGUST 31. See MILPER 17-263 for details and points of contact: https://go.usa.gov/xRfr6 (CAC/DS Logon only).
13	Bonuses	6,351	78,628	Active-duty Soldiers have a two-week decision window from May 10 to May 23 to apply for the Selective Retention Bonus Program, which has some new sweeteners added as a way to entice those now on active duty to continue serving. For some Soldiers, reenlistment during the two-week period will mean lump-sum bonuses -- extra money to spend over the summer months, perhaps. For others, depending on their military occupational specialty, it might be better to wait until the two-week window closes. Read on for details: https://go.usa.gov/x5zAb
14	Enlisted Promotions	5,300	76,399	U.S. Army Human Resources Command has posted the official release of the FY 2018 Brigade+Battalion Command Sergeant Major and Sergeant Major Key Billet Centralized Selection List (CSL) Slate for both Regular Army and United States Army Reserve, Active Guard Reserve: https://go.usa.gov/xX8ZY (CAC/DS Logon only). Congratulations to these stellar NCO leaders.

15	Enlisted Promotions	4,344	91,526	U.S. Army Human Resources Command has announced details of the FY18 Regular Army (RA)/United States Army Reserve (USAR) Active Guard Reserve (AGR) MASTER SERGEANT Promotion Board. Department of the Army (HQDA) selection board is scheduled to convene at the DA Secretariat, Fort Knox, Kentucky, on 6 FEBRUARY 2018 to consider eligible Soldiers for promotion to MSG. Additional board missions include conducting the QMP, Qualitative Service Program (QSP) and Standby Advisory Board (STAB) as needed. See MILPER 17-333 for eligibility requirements, records update dates and points of contact: https://go.usa.gov/xn4Vt (CAC/DS Logon only).
16	Enlisted Promotions	2,795	41,586	Defense Media Activity unpacks Army Directive 2017-28, which realigns the promotion process for SGTs and SSGs to ensure sufficient numbers of qualified Soldiers are integrated onto promotion-recommended lists. It means enhanced opportunities to assume leadership positions to meet the needs of the Army. Watch to see how it affects you!
17	Benefits	2,341	78,785	Still unclear about the Blended Retirement System? Let @ArmyHRC break it down for you....
18	Officer Promotions	1,518	81,207	U.S. Army Human Resources Command has released results of the FY 2017 Active Component, Captain, Army Competitive Category Promotion Selection Board: https://www.hrc.army.mil/content/5786 (CAC/DS Logon only).

19	Security Force Assistance Brigades	1,426	67,068	Are you looking for a more challenging assignment? The U.S. Army is standing up the first Security Force Assistance Brigade at Fort Benning later this year and looking for an all-volunteer force. If you are interested, get in touch now with your assignment manager — view the video for more information and Human Resources Command contacts. https://www.youtube.com/watch?v=btcDQnO7cCg
20	Officer Promotions	1,286	40,157	U.S. Army Human Resources Command has posted the Fiscal Year 2017 Active Component, Chief Warrant Officer Three/Four/Five (CW3-CW5) Promotion Selection Board results https://www.hrc.army.mil/content/5786 (CAC/DS Logon only). Congratulations to all selected CWOs!
21	Officer Promotions	435	78,354	U.S. Army Human Resources Command will release the Fiscal Year 2017 (FY17), Reserve Component (RC), Major (MAJ), Army Promotion List (APL), Army Reserve Active Guard Reserve (AR AGR), Army Reserve Non-Active Guard Reserve (AR Non-AGR) and Army Reserve National Guard of the United States (ARNGUS) Competitive Categories, Promotion Selection Boards at 07:30 EDT on 12 SEPTEMBER. See MILPER 17-268 for details and points of contact: https://go.usa.gov/xRAdu (CAC/DS Logon only).

22	Bonuses	9,861	62,169	With the total Army tasked to expand by 28,000 troops this year, the service hopes to retain quality Soldiers with incentives such as cash bonuses up to $10,000 for extensions. Sgt. Maj. of the Army Daniel A. Dailey discussed details with Soldiers at Fort Meade earlier this month. “We need Soldiers to stay in the Army. If you're on the fence, go see your career counselor. I guarantee you that they have some good news,” Dailey said. Read more here - http://go.usa.gov/x9mWM
23	Photos	9,233	66,890	Planning ahead for Board season? Be sure to look at the new AR 640-30 (Official Army Photographs) published at the end of March to ensure your official photo meets requirements. Go to http://www.apd.army.mil/ProductMaps/PubForm/ActiveSearchFull.aspx and search for AR 640-30 to view and download the newest publication dated 20170329. And remember that installation photo labs will get very busy, so if you know you will need a photo before your Board, go to www.vios.army.mil and schedule your appointment in time.
24	Benefits	8,903	36,551	It's your money, make sure you keep it! Get your BAH certifying documents loaded into iPERMS today!
25	Recruiting & Enlisting	8,446	65,504	Army G-3 has announced end strength increases for the regular Army of about 16,000 active-duty Soldiers. Several Army units previously slated for closure will be retained and plussed up due to an Army end-strength increase spelled out in the 2017 National Defense Authorization Act. Units now scheduled to remain active include

				the 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division, stationed in Alaska; the 18th Military Police Brigade Headquarters in Europe; the 206th Military Intelligence Battalion at Fort Hood, Texas; and the 61st Maintenance Company in Korea. The readiness enhancement account will provide flexibility to the Army's Human Resources Command to ensure units are fully manned before they deploy, said Army officials. In addition to the Regular Army increase, the Army Reserve and Army National Guard are also slated to gain end strength. The National Guard will be approved to grow by 8,000 Soldiers and the Army Reserve will be approved to expand by 4,000, bringing the total force to about 1,018,000 Soldiers, according to Army officials. Read more here: https://www.army.mil/article/188920/

Top Twenty-five HRC Tweets in 2017 (HRC, 2017).

	Topic	Impressions	Engagements	Tweet
1	Recruiting & Enlisting	35,985	992	Get SMA Dailey's take on @USArmy future enlistment standards https://t.co/UuW0awmsYT @USArmyReserve @NationalGuard @FORSCOM @TRADOC @hqamc https://t.co/8RrBz7e9XN
2	Enlisted Career & Assignments	32,114	209	Join @ArmyHRC on Facebook 7 March for latest on @USArmy ENLISTED ASSIGNMENTs + STEP https://t.co/HwrTJgt2E8 @FORSCOM @TRADOC @ArmyREUP https://t.co/NR6wcAVl1U
3	Promotions	15,292	545	FY17 RA +USAR AGR SFC Promotion List 15 AUG https://t.co/7MwhwzNRl9 @USArmy @USArmyReserve @FORSCOM @TRADOC @15thSMA https://t.co/pfi8vTAsKC
4	Modernization	13,276	279	Two weeks on duty, @SecArmy Esper visits NTC, commits to building agile, lethal, technologically advanced @USarmy force https://t.co/NNYt1nkDxe @FORSCOM @TRADOC @hqamc @USArmyReserve @NationalGuard @ArmyHRC https://t.co/WokdjIayj0

5	Promotions	11,869	666	@ArmyHRC posts FY17 RA +USAR AGR SFC Promotion Selection List https://t.co/qvpZot3sRZ @USArmy @USArmyReserve @FORSCOM @TRADOC @15thSMA https://t.co/VNxKJKCZlV
6	Security Force Assistance Brigades	11,853	162	@USArmy pushes to meet end strength goals, man SFABs https://t.co/Jy1mZ4kOf9 @FORSCOM @TRADOC @hqamc @USArmyG1 @ArmyHRC @USArmyDoctrine https://t.co/0PCSLwTMRf
7	Awards and Decorations	11,778	160	Watch live now as @USArmy CPT Gary Rose is inducted into the DoD Hall of Heroes https://t.co/9jOwsTpn7l @ArmyHRC @FORSCOM @TRADOC @hqamc https://t.co/Is84pQBPZK
8	Officer Promotions	9,448	328	@ArmyHRC to post FY18 Prof of Mil Sci CSL results for COL/LTC/MAJ https://t.co/M7Vciu3iRl @FORSCOM @TRADOC @hqamc @USACGSC @USArmyDoctrine https://t.co/CLCA3JzxQ9
9	Leadership	9,104	62	@ArmyHRC says -- Get the word from someone who knows: listen to @15thSMA CSA Daniel Dailey @USArmyG1 @FORSCOM @TRADOC @ArmyREUP https://t.co/WxrPgjWFl4

10	Benefits	8,775	72	Are You Covered? @ArmyHRC says SGLI Online Enrollment System (SOES) is live https://t.co/7sfcMrM9nv @USArmy @USArmyReserve @NationalGuard https://t.co/y3gZz19EAT
11	Promotions	8,750	169	Soldiers can view promotion results in the field, on smartphones https://t.co/PSvWSmbEEA
12	Enlisted Promotions	8,543	131	@ArmyHRC posts FY19 BDE/BTN CSM CSL Board for RA/ARSOF/SMU/USAR-AGR: https://t.co/h1dlfMWfpD check criteria @USArmy @USArmyReserve @15thSMA https://t.co/yBuam4bJyv
13	POWs/MIAs	8,534	22	Honoring U.S. POWs/MIAs: @ArmyHRC Brings America's Soldiers Home https://t.co/ODnCH64cfi @PacificCommand @usarmyCentral @USArmyEurope https://t.co/kHabyZG9it
14	Transition	8,353	71	Join @SFLTAP Twitter Chat THURS 12:00-13:00 EDT #HireaSoldier for live resume/job hunt event @USArmy @USArmyReserve @NationalGuard @ArmyHRC https://t.co/rBbmGZeBT4

15	Enlisted Career & Assignments	8,275	62	@ArmyHRC posts FY18 Enlisted Aide program: submit deadline is 29 SEPT https://t.co/1PMOeyKYBY @FORSCOM @TRADOC @ArmyFortLee @ArmySustainment https://t.co/8b0Tee37IB
16	Officer Promotions	8,235	291	HEADS UP â€“ POSTING DATE FOR FY17 ACTIVE @USArmy CW3-CW5 PSB lists HAS BEEN DELAYED. UPDATED RELEASE DATE will post here soon as available. @usacac @Ft_Rucker @Army_Aviation @ArmyG1 @FORSCOM @TRADOC @hqamc @USArmyDoctrine @USASOCNews @ArmyCyberCoE @PacificCommand @usarmycentral https://t.co/4IDqJdvnck
17	Women's Equality Day	7,781	121	@ArmyHRC celebrates #WomensEqualityDay https://t.co/Nq7WXYQst2 @USArmy @USArmyReserve @FORSCOM @TRADOC @NationalGuard https://t.co/FjTjcAIwP1
18	Enlisted Promotions	7,739	94	@ArmyHRC talks @USArmy Enlisted Promotions https://t.co/mcvvbzHPfJ @USArmyReserve @NationalGuard @FORSCOM @TRADOC @hqamc @15thSMA @ChiefNGB https://t.co/aU9anEZcoU

19	Bonuses	7,422	157	@ArmyHRC posts changes to @USArmy Active Component Selective Retention Bonus (SRB) Program https://t.co/AIjt2ae4xH @FORSCOM @TRADOC @hqamc https://t.co/OjSpGLq5j2
20	POWs/MIAs	7,369	60	Honoring U.S. POWs/MIAs: @ArmyHRC Brings America's Soldiers Home https://t.co/ODnCH6lNDS @DeptVetAffairs @USDOL @SFLTAP @ChiefNGB @15thSMA https://t.co/aFuiIu0WtV
21	Officer Promotions	7,247	118	@ArmyHRC has posted @USArmy Active Component Officer Promotion Numbers for September: https://t.co/T8FYMw855X @FORSCOM @TRADOC @USACGSC https://t.co/DrfDcf6eM9
22	Education	7,181	106	@ArmyHRC announces FY18 National Intelligence University master's degree programs https://t.co/cO0I4Yfaiw @USArmy @ArmyWarCollege @USSOCOM https://t.co/c0ME2FZ55C
23	Selection Boards	7,070	163	@ARMYHRC posts info on AGR 1ST SGT CSL Panel https://t.co/0i0lY72miO @USArmyReserve @LTG_Luckey @15thSMA @Sgt_Maj_Academy @NCOJournal https://t.co/rioMuMwjmP

24	Enlisted Career & Assignments	7,055	79	UPDATED guidance on @ArmyHRC issued AC enlisted assignment requests for deletion/deferment/early arrival https://t.co/MyMo7G0SkN @USArmy https://t.co/6yMEANCNYt
25	Promotions	7,026	88	HRC talks Centralized Promotions + Board Files May 16 - https://t.co/UqdOePr63l @USArmy @USArmyReserve @FORSCOM @TRADOC @USArmyG1 https://t.co/VpZUIYiHYF

(Human Resources Command, 2017)

APPENDIX D:

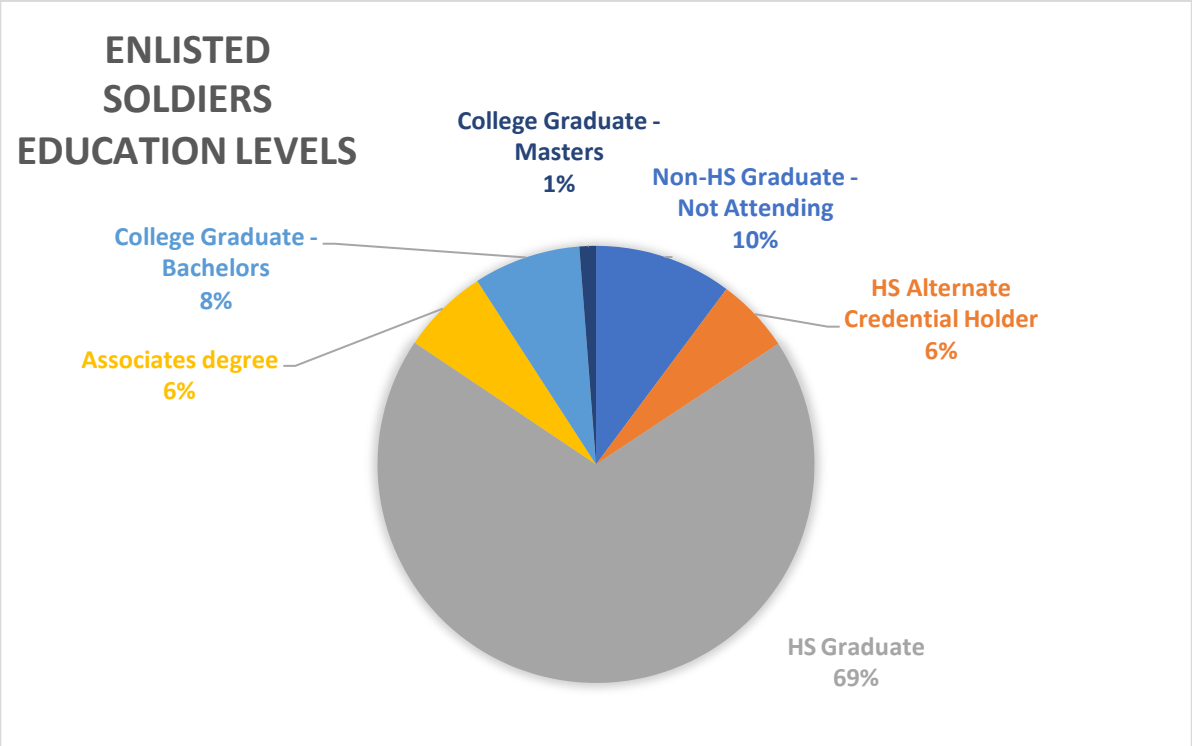
Table 3: U.S. Army Enlisted and Officer Education Levels

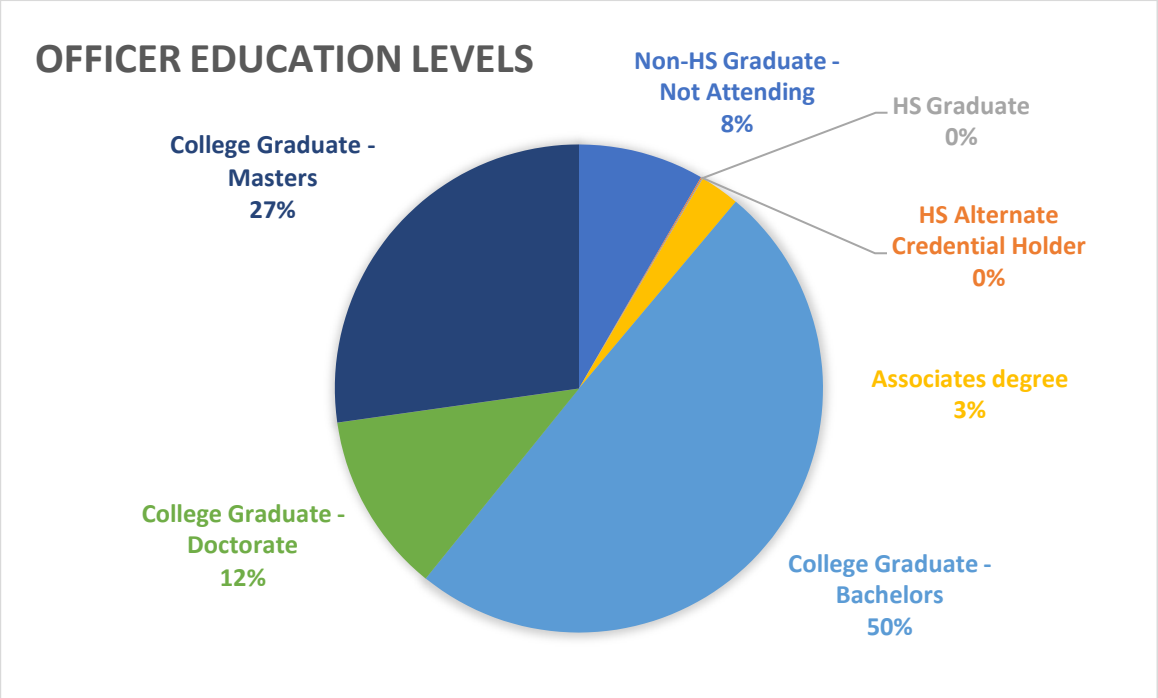
Education Level	Active Duty Officer	Active Duty Enlisted	Selected Reserve USAR Officer	Selected Reserve USAR Enlisted	AGR USAR Officer	AGR USAR Enlisted	IRR USAR Officer	IRR USAR Enlisted	Education Level	Totals	Percentage
Non-HS Graduate - Not Attending	8492	35353	770	28083	83	2674	186	6837	Non-HS Graduate - Not Attending	82478	10.70%
HS Alternate Credential Holder	**58**	**21914**	**100**	**6418**	**12**	**292**	**12**	**4030**	**HS Alternate Credential Holder**	**32836**	**4.26%**
HS Graduate	38	256087	1,955	82787	135	3859	2051	69994	HS Graduate	416906	54.09%
Associate degree	**2137**	**25158**	**738**	**9631**	**129**	**1483**	**115**	**2184**	**Associate degree**	**41575**	**5.39%**
College Graduate - Bachelors	44447	30892	19,222	18404	1722	2762	3876	4990	College Graduate - Bachelors	126315	16.39%
College Graduate - Masters	**24766**	**4807**	**10,698**	**4534**	**2160**	**749**	**644**	**584**	**College Graduate - Masters**	**48942**	**6.35%**
College Graduate - Doctorate	10964	215	3,789	362	169	28	343	51	College Graduate - Doctorate	15921	2.07%
Unknown	**110**	**613**	**822**	**1802**	**16**	**324**	**1691**	**444**	**Unknown**	**5822**	**0.76%**
Total	91012	375039	38,094	152021	4426	12171	8918	89114	Total	770795	100.00%

(Defense Manpower Data Center Reporting System, 2019)

APPENDIX E

Figure 2: U.S. Army Enlisted and Officer Education Levels


ENLISTED SOLDIERS EDUCATION LEVELS
College Graduate - Masters 1%
Non-HS Graduate - Not Attending 10%
College Graduate - Bachelors 8%
HS Alternate Credential Holder 6%
Associates degree 6%
HS Graduate 69%


OFFICER EDUCATION LEVELS
Non-HS Graduate - Not Attending 8%
HS Graduate 0%
College Graduate - Masters 27%
HS Alternate Credential Holder 0%
Associates degree 3%
College Graduate - Doctorate 12%
College Graduate - Bachelors 50%

APPENDIX F:

HRC Plain Language Checklist

Plain Language Checklist