Identifying How the US Army Civilian Education System Basic Course Learning Objectives Support the US Army Mission Command Strategy.

By

Tom A. Wiggins

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Chairperson Marc Mahlios, PhD.

John Poggio, PhD.

Meagan Patterson, PhD.

Steven White, PhD.

Donita Shaw, PhD.

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The Dissertation Committee for Tom A. Wiggins

certifies that this is the approved version of the following dissertation:

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Chairperson Dr. Marc Mahlios

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Chapter 1
Introduction of Issue

Issue:

In 2013 the Chief of Staff (CoS) of the US Army released its leadership strategy titled Mission Command (MC). In the Mission Command strategy document, CoS commands that "all Army leaders [including civilians] will understand and practice Mission Command philosophy." (AMCS 2013) Mission Command is a military term for empowerment (ADP 6-0).

The Army Management Staff College (AMSC) is charged with the Civilian Education System (CES). AMSC designed a new vision statement in 2014: The premier leader development experience, igniting the leadership potential in every Army civilian. AMSC is charged with civilian leader development and therefore should, inherently, design learning objectives that support the Mission Command strategy.

Empirical evidence suggests that CES already promotes and encourages the practice of Mission Command; although students and faculty do not refer to it as such. Students spend up to eighty percent of each course focused on processes such as communication, self-awareness, critical thinking, and conflict management. Each of these subjects can be directly tied to the principles of Mission Command.

The principles of Mission Command are considered to drive the Army's philosophy of empowerment. There are six principles of Mission Command according to the Army's theory: 1. Build cohesive teams through mutual trust. 2. Create shared understanding. 3. Provide clear commanders intent. 4. Exercise disciplined initiative. 5. Use mission orders. 6. Accept prudent risk (ADP 6-0).

Current resident CES courses are split into three levels: Basic (direct) leadership, Intermediate (organizational) leadership, and Advance (strategic) leadership. In order that all

Army leaders understand and practice Mission Command, this concept should be introduced to Army civilians at the direct leadership level in the Basic Course (BC). This assumption insists that CES is competency based, the courses build on topics, and students will attend the courses in order.

The BC is driven by five learning objectives or outcomes: 1. Embrace personal and professional development for self and subordinates as part of the requirement for Army service. 2. Are problem solvers who think critically and understand basic problem solving methodology. 3. Communicate effectively by speaking and writing clearly, concisely and persuasively. 4. Demonstrate character and competence in the practice of direct level leadership. 5. Understand and apply basic leadership principles to effectively lead small teams. Each of these learning outcomes are considered terminal learning objectives (TLO) or the end state. Each TLO is supported by enabling learning objectives (ELO) which are specifically addressed in each lesson plan (e.g. communication, feedback, leadership styles).

There is possibly some relationship between the BC learning objectives, and the principles of Mission Command. If this is true, then BC faculty and students may be currently practicing Mission Command on some level. The phenomenon of interest in this study is the degree to which students understand what Mission Command is, because the concept is not yet formally a part of the curriculum. In theory, the BC learning objectives should be driven, at least in part, by the Mission Command leadership strategy. This is not currently the case. However, if the TLOs are related to the philosophy of Mission Command, then how do the faculty and the students perceive this relationship? Specifically the study sought to answer the questions: **How does CES faculty rank BC learning objectives in achieving Mission Command? How do students rank BC learning objectives in achieving Mission Command?**

CES

The Army Management Staff College (AMSC) has existed in some fashion since 1985. For thirty years AMSC has been the primary leadership training institution for Army civilians. In 2005, the Civilian Leader Development Division (CLDD) merged with AMSC to create the current CES. CES is now responsible for educating and preparing Army civilians who are entering leadership positions to influence and inspire the workforce while providing purpose, direction, and motivation to accomplish the mission and improve the organization (AMSC 2015; ADP 6-22).

CES resident courses take place at the AMSC at Ft. Leavenworth, Kansas. The BC focuses on direct level leadership for emerging team leaders, and the course lasts for two weeks. The IC focuses on organizational leadership, and is geared towards leaders assuming supervisory responsibilities. The AC focuses on strategic leadership developing personnel for upper management roles. It is assumed that the courses build from one another; however, some students received constructive credit for these courses based on prior military education. This means that not every student that comes through the IC has the knowledge or experience of a BC graduate. With a foundational understanding of the concepts that the course should be building students are able to focus on the new content and processes.

Learning Objectives

Under the current and ongoing CES redesign the courses are formally identifying terminal learning objectives, and enabling learning objectives. Prior to the redesign, the learning objectives were identified as learning outcomes. There was far more flexibility in the curriculum to meet the learning outcomes, but no way to assure that the faculty was meeting them. As CES transitions away from inquiry based learning to competency based learning, the theory is that the learning objectives will be better assured.

Course learning objectives were designed by the faculty without input from other major Army commands. Organizations such as the Installation Management Command (IMCOM) and Army Material Command (AMC) were not asked to provide insight as to what should be covered in CES training. Managers, supervisors, and teams leaders should be asked what they would like for their subordinates and colleagues to understand and practice better, and to identify current short comings within their respective organizations. This feedback and data should enable AMSC to better prescribe and describe general learning outcomes for each course. Mission Command could serve as a stopgap until the courses have an appropriate timeline to design such a course.

CES is also currently going through competency mapping as a part of the CES redesign. Each faculty member was assigned several doctrinal leadership competencies, and tasked with researching their topics to identify each competencies importance, and linkages to other competencies. The leadership competencies can be found in Army Leadership doctrine such as ADP 6-22. These competencies are supported by both military doctrinal research and academic findings. Identified leadership competencies are the building blocks of the CES redesign.

Mission Command

Mission Command is the theory of empowering military personnel to lead. Although the term Mission Command was only indoctrinated in 2011, this theory has existed since 1982 (FM 6-0). The theory has been held a plethora of other titles including Battle Command and Command and Control (C2). All of these terms are meant to encompass the entire concept, and not only the philosophy of Mission Command. This leads to confusion of what the theory is and what it is really meant to accomplish. Considering the philosophy of Mission Command, the Army should better clarify that this theory is not commissioned officer or even military specific, but a tool for everyone. The Army is learning to do a better job expounding on what the concept actually means, namely empowerment (APD 6-0).

This study is focused on clarifying the art, or philosophy, of Mission Command. There is also a science side of Mission Command. Herein lies more confusion. The science of Mission Command was designed for officer use, and consists of operations processes. Mission Command is also an element of combat power. In actuality, Mission Command serves to drive the other five elements of combat power; it empowers them. Empirical evidence suggests that a majority of the military, service members and civilians, are confused as to what the purpose of Mission Command is (ADP 6-0; ADP 5-0) Thus the over-arching purpose of this study is to clarify how Mission Command is beneficial to Army leaders.

Chapter 2
Literature Review

The focus of this study will primarily consider the relation between two variables: Mission Command (DV) and learning objectives (IV). The researcher wants to better understand how the BC learning objectives relate to student/employee empowerment. Although this study only deals with a single dependent variable and an independent variable, their relationship is important in understanding the contributions of graduate military education to the field performance of Army leaders. Moreover it is important to examine the context of each variable, and provide an overarching understanding of the relationship, if any, of these two concepts.

Empowerment

Empowerment is the US Army's chosen leadership philosophy. (ADP 6-0) It is the strategy in which every Army organization is responsible for operating under. What is empowerment? Is empowerment identical for every organization and individual? Can the Army effectively standardize the concept of empowerment? How? Should we? It is essential that we understand what we are getting ourselves into when we commit to empowering our workforce.

The military term that has been chosen for the concept empowerment is Mission Command. Mission Command is defined as the exercise of authority and direction by [a leader] using mission orders to enable disciplined initiative within the [leaders] intent to empower agile and adaptive leaders in the conduct of …operations (ADP 6-0). For the study's purposes, I have replaced the term "commander" with [leader] in the definition and omitted "unified land" from operations. The military terminology in this definition may be part of the reason among civilians and the enlisted corps are confused with this concept. The Army has provided its definition of

Mission Command, but the Mission Command strategy dictates that Army leaders must understand Mission Command, and a definition may not suffice.

The definition of Mission Command does not describe the concept as an art and a science; however, doctrine does. The Mission Command strategy focuses on the concept of empowerment as an art. When the art of Mission Command is mastered and engaged properly it drives the science of Mission Command, and supports systems and processes. The science of Mission Command was written by and intended for staff officers. This confusion leads the majority of the Army to believe that Mission Command is meant primarily for officers, and does not affect the rest of the Army (ADP 6-0).

In order to create clarity of the philosophy of Mission Command, six guiding principles were developed. The principles of Mission Command serve to describe the concept as an art and eliminate confusion that Mission Command is only a management system for combat power. The six principles of Mission Command are:

- Build cohesive teams through mutual trust
- Create shared understanding
- Provide clear commander's intent
- Exercise disciplined initiative
- Use mission orders
- Accept prudent risk.

According to the Mission Command strategy, the Army wants to empower "all Army leaders." According to ADP 6-22 Army Leadership, every member of the Army should aspire to be a leader (FM 6-22). From these two Army doctrinal references we can infer that the Army intends to empower each and every service member. Through thorough examination and

interpretation we can conclude fairly precisely what the Army means by empowerment. In our examination let's break down how the Army describes each principle of Mission Command and provide some much needed inference.

The first principle of Mission Command, as listed above, is **Build cohesive teams through mutual trust**. Mutual trust is a shared confidence among leaders (ADP 6-0). Leaders shape cohesive teams by setting standards and maintaining consistency (ADRP 6-22). Therefore, one may infer that the Army wants its workforce to maintain shared confidence in each other. Trust is built through interaction and experience with others. Trust is difficult to earn and easy to lose. Building trust is time consuming, but can begin virtually immediately (Gambetta, 2000).

In order to **create shared understanding** we must maintain collaboration and dialog throughout the process (ADP 6-0). Shared understanding is the purpose of communication. Communication breakdowns often occur because stakeholders do not share values, cultures, or norms (Arias, 2000). Shared understanding forms on the basis of trust. The receiver has to trust that the giver of the information is right and for the right reasons, and vice versa. This proves that the principles of Mission Command are connected, and not separate concepts.

Some of the principles of Mission Command seem so specific that they can be difficult to translate to variable modes of practice. **Provide clear commanders intent** is not a principle meant only for commanders, but like the rest of the principles, for all leaders. Commander's intent is a *clear and concise expression of the purpose of the operation and the desired end state* (ADP 6-0). Perhaps a better way to phrase this principle would be provide clear expectations. Setting right and left limits helps to ensure that appropriate course of action are developed. Provide clear commanders intent is the first limitation established on empowerment. This statement means that someone is in charge of the mission, whether the mission is taking a hill or

cleaning out the office refrigerator. This leader is responsible for setting clear expectations of what is to be accomplished and why. A well-crafted intent conveys purpose, key tasks, and desired outcomes (ADP 6-0). However, it is not the leaders' job to tell the team how to accomplish the mission (Blackman, 2013). Remember, Mission Command serves to empower leaders not disempower or micromanage them.

By not telling the team how to accomplish the mission, leaders effectively empower the team to **exercise disciplined initiative**. General Patton is quoted with the saying "Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity." Empowerment is not a new military concept. Initiative can inspire innovation (Binnewies, 2007). This principle is designed to create opportunities and eliminate threats. Commander's intent sets limits in which leaders may exercise initiative. Shared understanding is essential when allowing leaders to exercise initiative. Leaders must understand the desired end state in order to appropriately apply judgment to complex and ambiguous problems (ADP 6-0).

Another limitation on empowerment is **use mission orders.** The Army defines mission orders as directives that emphasize to subordinates the results to be attained, not how they are to achieve them (FM 1-02). Mission orders are very similar to commander's intent. The primary difference between the two is that commander's intent offers an understanding of WHY whereas mission orders focuses only on the WHAT is to be accomplished. Mission orders can provide guidance and create clarity of the objective (Johnson, 1990).

The final principle of Mission Command is **accept prudent risk.** The Army also provides a definition for prudent risk: deliberate exposure to potential injury or loss when the commander judges the outcome in terms of mission accomplishment as worth the cost (FM1-02). While exercising initiative creates opportunity it can also create risk. Simply put, the payoff

must be worth the risk. Leaders must make reasonable assumptions and estimates in order to seize the opportunity.

Even if we understand what the Army means by empowerment, the term itself is still subjective. Empowerment can mean vastly different things to different individuals. One cannot assume that another is empowered by observation alone. Different organizations within the same agency may approach empowerment quite differently. Likewise, every individual has a different understanding of how they may be empowered (Van Maanen, 1985). One employee may feel empowered by being allowed to choose his own work schedule while another employee may view this as a common courtesy. Given this identical situation, one person has been empowered, and yet the other has not. Therefore, simply assuming an individual is empowered by the way that she answered a question is inappropriate, in this context. In order to create a fuller understanding of how an individual may be empowered we must deconstruct individual meaning of the term and the action (Derrida, 1979). This initial study will not deconstruct students understanding of empowerment in a qualitative manner.

Given that the Army intends to empower everyone in its service, and what the Army means by empowerment, we need to figure out to what end empowerment shall occur. Does the Army really intend to delegate decision-making and authority Army-wide (Hardy 1998)? Could the military really function if every person held equal authority? Who would be responsible (Mills 2003)?

We cannot know at this point to what end the Army intends to empower its own; however, we can make some valid assumptions based on the doctrinal descriptions. There are two principles of Mission Command that seem to exist to limit how much power may be given or

exerted. Provide clear commander's intent and use mission orders imply that the Army, in fact, does not intend to delegate all decision-making nor release all authority.

Although, I believe that the Army is paying more attention to empowering Army Leaders, it isn't clear, to what extent. Unfortunately, at this point, there is no conclusive research that answers such questions. I hope that my research will create a greater understanding of Mission Command, and its relation to empowering Army leaders.

Learning Objectives

One accepted educational practice for a successful course is to identify and implement terminal learning objectives up front. Terminal learning objectives (TLOs) serve as a strategy within the course that will ensure what the students are able to know, do, or feel at the end of the training (Johnson, 2000). Once we know what the course will accomplish then we design enabling learning objectives (ELOs). ELOs indicate what the students will actually do to support achievement of the TLOs (Johnson, 2000). In Professional Military Education (PME) each lesson consists on ELOs which support a TLO. While each lesson does require an ELO, a TLO is not required for every lesson; although it is highly encouraged, for linkage.

The CES BC currently has five TLOs which are supported by fifteen ELOs:

TLO: 704-AMSC-01 (LO1)
Action: Are problem solvers who think critically and understand basic Army Problem Solving.
ELO: Administer Basic Army problem solving methodology.
Apply Critical Thinking concepts.

TLO: 704-AMSC—02 (LO2)
Action: Communicate effectively be speaking and writing clearly, concisely, and persuasively.
ELO: Demonstrate effective writing skills.
Describe the elements of communication.
Explain the elements of feedback.

TLO: 704-AMSC-03 (LO3)
Action: Demonstrate character and competence in the practice of direct level leadership.
ELO: Generalize Army Leadership
Summarize the definitions of coaching, counseling, mentoring
Produce a self-development plan
Produce a program to form and sustain a high performing team

TLO: 704-AMSC-04 (LO4)
Action: Understand and apply basic leadership principles to effectively lead small teams.
ELO: Summarize what it means to lead small teams
Identify individual preferred learning style
Demonstrate an understanding of conflict modes

TLO: 704-AMSC-05 (LO5)
Action: Embrace personal and professional development for self and subordinates.
ELO: Explain CES BC Cornerstone Concepts
Discuss relationships between values, ethics, morals, and stages of CT
Summarize the CES BC learning transfer

The "action" is the outcome that the student is expected to reach. This could be considered the strategic level of learning for the CES BC. There are currently NO direct ties to the philosophy of Mission Command. The ELOs represent lessons or major activities in the course. For example, if a student demonstrates effective writing, describes the elements of communication, and explains the elements of feedback then she has met the terminal learning objective of effective communication skills.

How are the students demonstrating effective writing, describing communication, and explaining feedback? Each of these ELOs or lessons are supported by standards. Standards imply how the student will achieve the ELO. Standards work for ELOs the same way that ELOs work for TLOs; by supporting the objective (Anderson, 2001). So, for the ELO Demonstrate Effective Writing, the standards might be: 1. Convey the purpose of written communication AND 2. Organize written communication in a logical, coherent manner with supporting ideas and evidence. At the lowest level of consideration, standards, we should easily identify what the students are doing. The behaviors that we consider to terminate the learning event should be thought of as strategic.

In order to understand any potential relationship between Mission Command and CES BC LO it is imperative that we understand the concepts equally. What do each of the LO mean? How were the LO chosen? Where did the concepts come from? Who decided the final LOs?

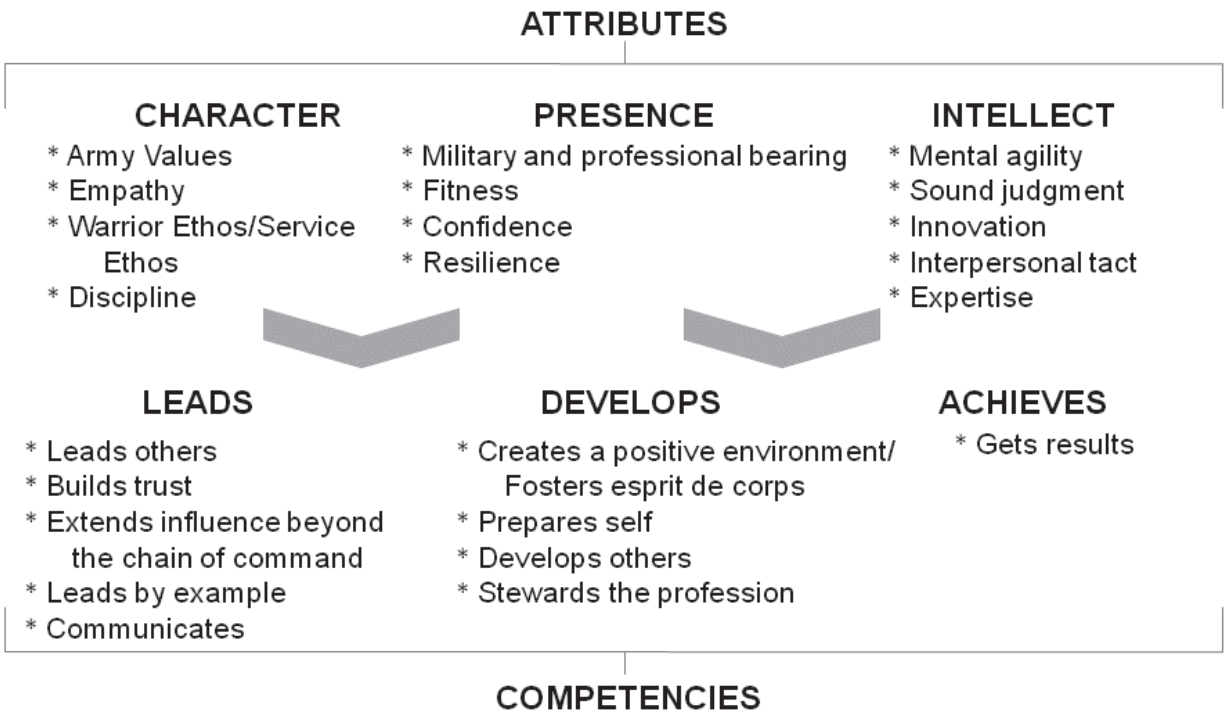
And, perhaps most important to our study, why were these LOs implemented instead of more Mission Command specific LOs?

LO1: Understand and apply basic leadership principles to effectively lead small teams.

The CES BC has identified ten basic leadership principles:

- Leading Teams
- Leading Others
- Team Building
- Supervision
- Team Development
- Developing Teams
- Producing Results
- Coaching/Counseling Employees
- Evaluating Performance
- Interpersonal Skills/Tact

Nowhere in US Army leadership doctrine, is there mention of basic leadership principles. ADP 6-22 focuses on leadership attributes and competencies as a part of the leadership requirements model.



Army Leadership Requirements Model (ADP 6-22)

In comparing the CES BC basic leadership principals with the Army Leadership Requirements Model we can see that there is some overlap. Leading and developing others, and producing results are direct correlations. Coaching, counseling, and evaluating employees hold no weight in current leadership requirements model.

Using the term "basic leadership principles" may confuse students with the principles of Mission Command. The principles of Mission Command is a doctrinally sound term whereas its counterpart is not. The concepts that the CES BC considers the basic principles of leadership come from outdated doctrine and non-doctrinal resources. If we were to Google "basic leadership principles" we would find many similar lists, but none are Army doctrine.

LO2: Communicate effectively by speaking and writing clearly, concisely, and persuasively. Few people would try to refute that effective communication is a foundation of

leadership. However, there are many different ideas of what effective communication looks like. The Army describes communication as the process of transmitting information to create clear expectations, and by practicing active listening; in order to create shared understanding (ADRP 6-22). Leaders create clear expectations by providing context and purpose in their information. Active listeners ask questions, paraphrase, and pay particular attention to emotions attached to messages. Active listeners listen to understand not only to respond (Clark, 1991). Although additional resources were required to describe active listening, the CES BC stuck primarily to doctrinal references for this LO. Additionally, this LO relates closely to Mission Command doctrine.

LO3: Are problem solvers who think critically and understand basic Army Problem Solving methodology. The US Army describes critical thinking as examining a problem in depth for multiple points of view, and not just accepting the first course of action (ADRP 6-22). This concept falls under the leadership attribute, mental agility. Critical thinking does not encompass mental agility, it is only one half. The other half of mental agility is creative thinking which has all but been neglected in CES. Incorporating Mission Command into CES would provide a better rounded opportunity to achieve mental agility by practicing taking initiative and risk taking (ADRP 6-22; ADP 6-0).

Although the Army generally defines critical thinking, it does a poor job describing and explaining the concept. To mitigate this shortcoming the CES BC utilizes *Critical Thinking: Concepts and Tools* by Richard Paul & Linda Elder to add substance to the idea. The primary concepts that the BC focus on from Paul and Elder's work are the Universal Intellectual Standards and the Elements of Thought (Elder, 2007).

LO4: Demonstrate character and competence in the practice of direct level leadership. What are character and competence and who decides if the student is demonstrating these ideas? The learning objective is far from objective. CES BC Review for 2012 identifies character and competence as providing feedback, conflict management, empathy, team building, self-awareness, Army Values, motivation, supervision, and confidence. There are direct linkages to the course curriculum for feedback, conflict management, team building, self-awareness, and Army Values. There are indirect linkages for empathy, motivation, supervision, and confidence. In Mintzberg's 1973 classic, he lists specific interpersonal skills as the ability to establish and maintain social networks, the ability to deal with subordinates, and the ability to empathize with top-level leaders (Riggio, 2008). CES' elements of effective leader interpersonal skills (character and competence) may not be doctrinal, but they fit nicely in Mintzberg's three categories.

LO5: Embrace personal and professional development for self and subordinates as part of the requirement for army service. The corresponding ELOs do not appear to support this TLO directly. Student's engage in development by leaving their comfort zones, and trying something new or difficult. This could be simply working in a team, public speaking, working after hours, or discovering ones strengths and weaknesses. Personal and professional development in the CES BC is situational and varies greatly. ELO's should remain as subjective and flexible as possible. The students learn, in class, that personal and professional development cannot be standardized.

With this foundational and doctrinal understanding of Mission Command and the CES BC learning objectives we can frame some instrumental questions. From this study, we hope to understand how the LO are related to and supporting Mission Command. Ultimately, we need to

consider if Mission Command should be the foundation of the CES BC. It begins with this literature review. Next, we will explore our perceptions of how the CES BC LO support the Mission Command strategy in order to ask the right survey questions.

LO support MC

A quick review of CES BC learning objectives and the principles of the philosophy of Mission Command show that there are currently no direct linkages. The closest similarity is LO: effective communication and Mission Command: create shared understanding. One would need an expert understanding of both concepts to clearly make that connection. While it may be difficult to make connections between current CES BC course objectives and principles of Mission Command, for the subject matter exerts (SME) connections likely exist.

It is possible that this study's survey data should reveal how faculty view connections between the BC curriculum and Mission Command strategy. On some level, students may see connections too, especially once they have considered the evidence. Although empirical evidence may suggest that the BC is practicing Mission Command on some level, it should not be this difficult to understand that we are. Mission Command should not be a hidden curriculum, it should be the end state of the course (Snyder, 1970).

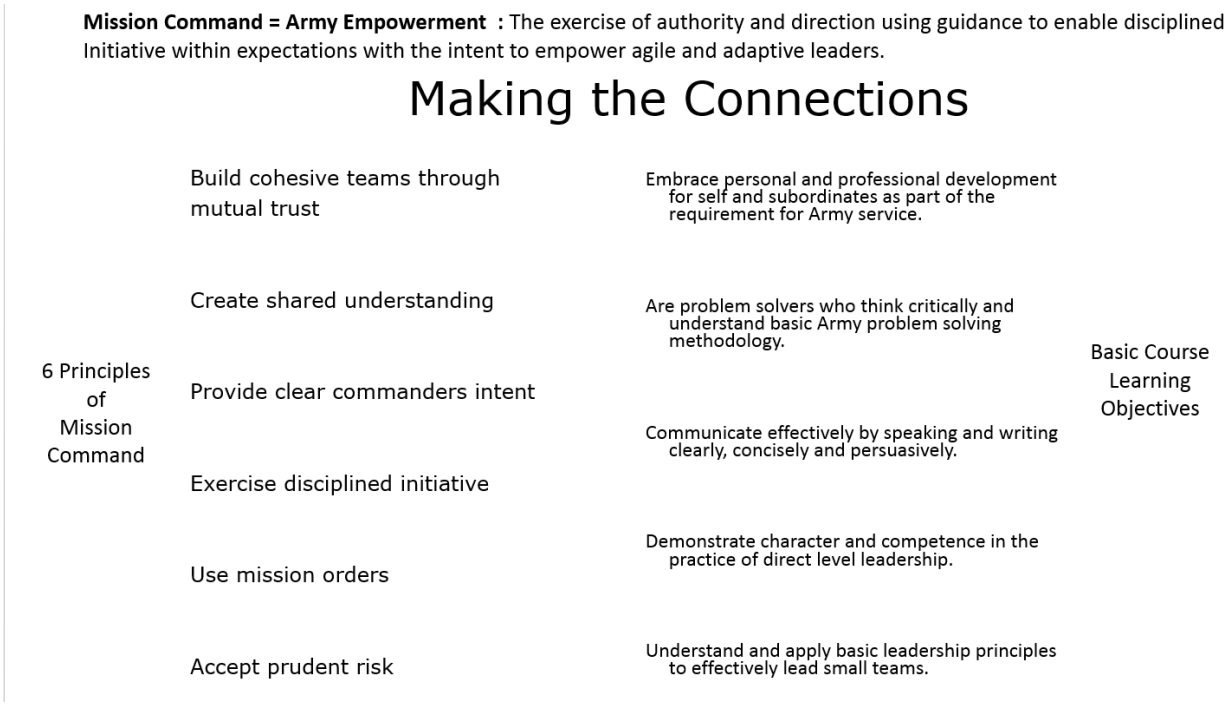


Fig. 1
Making the Connections

In figure one we can view the six principles of Mission Command side by side with the five BC learning objectives. This researcher has described, individually, the principles of Mission Command, and the CES BC learning objectives. Before the study is implemented it is important to acknowledge potential biases.

Considering the CES BC learning objectives (LO) as independent variables and the principles of Mission Command as dependent variables I am proposing that the LO are supporting the Mission Command strategy. If the LO are supporting Mission Command, how much are they supporting? How many LO are supporting each principle of Mission Command?

Build cohesive teams through mutual trust appears to be supported by at least four LO's. Basic leadership principles, as described by CES and noted previously, provides standards and

consistency which build confidence. Developing and leading others while performing at a high level can serve as a catalyst for trust if consistent.

Another way to build cohesive teams through mutual trust is by using effective communication skills. Effective communication skills are open and honest. By practicing active listening and creating clarity, leaders have provided standards for communicating. In turn, this consistency in communication can also promote confidence and trust.

Applying elements of effective leader interpersonal skills should encourage trust and cohesiveness as well. Elements such as self-awareness, empathy, confidence, team building, feedback, and conflict management may enable empowerment. Knowing oneself, understanding others feelings, and how we handle problems can strengthen the team and organization (Riggio, 2008; Holton, 2003).

Team members that participate in personal and professional development can become a more valued and trusted part of the team because development indicates that leaders care about their performance. Professional development can help to ensure proficiency in leaders tasks and understanding that may build confidence in their ability to lead (Guskey, 2000; Fiedler, 1963). Once confidence has been established then trust and cohesiveness may grow.

Create shared understanding is likely supported by all five TLOs. According to Army doctrine, creating shared understanding is a process, as are, likely, all of the principles of Mission Command. The CES BC utilizes the content/process model (Morris, 1976). The BC curriculum is designed to be eighty percent process and twenty percent content. That means that the students are encouraged to focus more on the effort that goes into completing the task than the

actual task itself. The process relationship between Mission Command and the BC learning model is yet another indicator that the two should be more closely tied together.

Basic leadership principles, as described by CES, can empower shared understanding. Since communication is a foundation of leadership and the primary purpose is to create shared understanding, the principles assist in bridging gaps. For example, team building serves to enhance cohesiveness which fosters open communication, ultimately creating shared understanding. Likewise, other principles such as coaching and counseling can serve to create shared understanding about performance and expectations (Arias, 2000).

Effective communication skills are the foundation for creating shared understanding. These two concepts likely share the strongest correlation. The purpose of communication is to create shared understanding. CES BC students practice active listening skills with a minimum goal of listening to understand, by asking questions. The curriculum also insists that student work on clearly stating their ideas using specificity (Tamm, 2004; Elder, 2007).

Critical thinking in the classroom also enables shared understanding. Students are taught, and practice using Universal Intellectual Standards (UIS) in conjunction with other critical thinking concepts such as the Elements of Thought, intellectual traits, and thinking traps. The UIS are designed to create shared understanding. By considering ideas and issues using clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness leaders can help eliminate ambiguity (Elder, 2007).

Leader interpersonal skills such as feedback, conflict management, empathy, team building, and self-awareness are both supported by shared understanding and support shared understanding. Leaders require shared understanding in order to navigate their way through staff

processes such as noted above. Interpersonal skills such as feedback and empathy can also create shared understanding by building a basis of trust (ADRP 6-22).

When leaders participate in personal and professional development they can set the stage for creating shared understanding. As development builds greater understanding of concepts and processes, the leader has an opportunity or obligation to share her new found knowledge. While the process may include debate of the new material, ultimately leaders will reach a better shared understanding of the development by discussing information and ideas.

Clear commander's intent can be driven by the basic leadership principles, effective communication skills, critical thinking, and interpersonal skills. Commander's intent can be viewed as a limitation on empowerment by providing boundaries. It can also empower leaders to perform within the confines of leadership principles, encourage critical thinking to meet intent, and use interpersonal skills to ensure motivation and confidence (ADP 6-0; ADP 6-22).

Exercising disciplined initiative requires support from all five BC learning concepts as well. Initiative is referred to as *how* we do things, and accomplish the mission. Recalling the content/process model, content is the task, or the what. Process refers to *how* the task is accomplished. Do BC learning objectives describe how to achieve Mission Command?

Employees who invest in their development are inherently taking initiative. It may be easier to stay in our comfort zones, put in our forty hour work week, and never aspire to greater knowledge, understanding, or responsibility. Those who engage in personal and professional development may be more likely to achieve greater enlightenment and exposure than those who do not. The more that the learner knows and understands the easier it may be for her to exercise initiative.

By design, in order to exercise initiative one must be able to solve problems. Initiative can occur when we have a problem in which there is not a suitable solution. Rather than discarding the problem or providing an insufficient solution, problem solvers can take initiative that may lead to innovative results. Likewise, initiative can lead to better problem solving practices (Lester, 1997).

Teams cannot properly exercise disciplined initiative without effective communication. Active listening allows team members to gain shared understanding of new ideas. Clear expectations provide a basis for initiative to begin. Once a new idea or problem is considered and shared understanding is assumed, the team can begin exercising initiative.

Some leader interpersonal skills directly affect the ability to exercise disciplined initiative and some skills are indirectly correlated. Above all other interpersonal skills, that CES identifies, motivation stands out as essential to exercising initiative. It is easy to take the easy way out or do what the team has always done, but to try something new and implement change requires motivation (Horton, 2003). Likewise, leaders must have confidence in themselves, their teams, and their supervisors in order to exercise initiative. Confidence starts with self and social awareness, understanding ones strengths and weaknesses, and how to hone and leverage them.

Certain leadership principles may support exercising discipline as well. Interpersonal tact depends on knowing what others perceive. It relies on accepting the character, reactions, and motives of the leader and her team. Interpersonal tact recognized diversity, displays self-control, and achieves balance and stability (Bliss, 2014). Leaders must have this awareness in order to be disciplined and to take initiative. Leaders applying these principles also produce results. Perhaps more impressively, teams exercising leadership principles and disciplined initiative can

produce innovative results and more easily implement change. Lastly, exercising initiative requires leadership at the team level. Someone directly involved with the project must be responsible for ensuring that the process is being considered and respected.

Using mission orders can guide the team's process and assist with keeping the project on schedule and within the limits of its scope. This direction may rely on at least two BC learning concepts for support. Guidance relies on the ability to think critically, problem solve, and communicating effectively.

Mission orders place limitations on just how much initiative a team can take. Working within confines can present both challenges and structure. Mission orders provide the end state which is to be accomplished. Teams must be able to work backs to solve the problem or address the issue. Critical thinking will help teams to consider courses of action from multiple perspectives using depth and breadth. The Army Problem Solving Model provides structure and guidance to help teams using mission orders.

Teams must have a shared understanding of mission orders in order to accomplish their mission. Teams that do not have a shared understanding of the guidance provided may inhibit reasonable progress. Leadership may intend for a certain outcome in a prescribed manner, but if the team believes that they are free to exercise initiative there may be a serious disconnect and repercussions. Active listening and clear expectations will help to understand and effectively use mission orders.

Accepting prudent risk makes reasonable assumptions and helps create opportunities through critical thinking, communicating effectively, using basic leadership principles, and

applying interpersonal skills. Personal and professional development may also support risk taking on a more indirect level.

In order to create opportunities, teams must be able to think in different boxes or perspectives. Army leaders use critical thinking in order to consider issues using the broadest perspective possible (Brabandere, 2013). Teams must be willing to think differently in order to derive new solutions; even to old problems (Isaacson, 2013). Using critical thinking as a part of accepting risk supports mental agility in entirety.

To accept prudent risk there must be continuous communication on the team. The moment the team fails to communicate, the risk is no longer prudent, and the plan or process becomes a gamble. A best practice for creating opportunities is brainstorming. Brainstorming consists of clearly stating and listening to many ideas (Traut-Mattausch, 2015).

By accepting risk the team has the ability to produce innovative results. Producing results is a basic principle of leadership. Innovative results have the ability to lead change within an organization, and overrule complacency (Kotter, 1996). Once teammates recognize alternative methods to problem solving they may be inspired to try new approaches in other areas of their work. Ultimately, its performance which counts.

Being empowered to accept risk can enhance interpersonal skills. When the team is encouraged to try new methods it can boost motivation and confidence. Teams are motivated to think outside of the box and try unconventional methods in order become more effective and efficient in their mission. This approach allows teams to own their success, and thereby builds confidence for future risk taking.

Clearly there are connections between basic course learning objectives and Mission Command. This study will help to better understand what the connections are, and how they support each other. If we can understand how the learning objectives support Mission Command then we will have an opportunity to better leverage these knowledge, skills, and abilities.

Learning Transfer

In an institution of higher learning, transfer can be thought of as learning which has occurred, and has the potential to be used in an alternative context as a later time (Perkins, 1992). There are many variables that come into play when thinking about learning transfer, including: training, education, empowerment (culture), motivation, interventions, barriers, near, far, high, low, positive, negative, scaffolding, schema, and a plethora of other issues (Egan, 2004; Gardner, 1994; Holton, 2003; Leberman, 2012; McKeough, 1995; Mezirow, 1991; Mills, 2003). Learning transfer is the primary purpose and benefit of Professional Military Education (PME). Students are selected based on their performance and motivation to learn and excel. The same could be said for GRE and GMAT entrance exams into graduate school. However, proving initial intrinsic motivation and intelligence, and maintaining a GPA is not the same as PME's investment. Being admitted into graduate school does not pay for the service or ensure gainful employment upon completion.

PME is designed to build from prior experience (Dewey, 1938). Building experiences makes learning transfer easier (Holton, 2003). For example, upon commission, a new officer must attend the Basic Officers Leader Course (BOLC). Once he has gained experience and rank the officer will continue on through the Captains Career Course (CCC). Eventually the officer may become eligible for Intermediate Leader Education (ILE), which culminates with a master's degree. Officer PME terminates with the WAR College where the officer may earn a PhD.

There are countless training opportunities in between each educational experience as well as opportunity for academic education.

The same methodology is employed in PME, where I teach; the Civilian Education System (CES). New Army employees must attend complete the Foundations Course (80hr dL) within one year at their station. Between one to five years Army civilians are expected to attend the Basic Course (direct leadership)(40hr dL and 80hr resident). Upon promotion to GS11 or above civilian Army leaders must enroll in the Intermediate Course (organizational leadership)(40hr dL 120hr resident). GS13s and above are expected to complete the Advance Course (Strategic Leadership)(40hr dL 160hr resident). In between, there are a plethora of CES dL courses available to Army civilians that should assist them with understanding and increasing responsibility.

CES has successfully scaffold learning in order to constantly take advantage of and encourage near learning transfer (Kaiser, 2013; Perkins, 1992). By building on past experiences, and the knowledge that we know should be present, we can inspire learning transfer. This concept slowly builds processes as experience increases. Instead of introducing the entire concept of leadership in one chunk, let's say during one semester, the students are given time to test theories and experiment with the approaches that work for them.

CES also utilizes low-road learning transfer. Low-road transfer enables learners/leaders to make quicker decisions (Perkins, 1992). When confronted with a problem the learner can reach back to a previous experience, educational or operational, and use it in her current situation. Sometimes an analogy and sometimes not, the Army trains how it fights. Because low-road transfer triggers reflexive behaviors in similar conditions these leaders can adapt very quickly and easily (Perkins, 1992).

CES currently does a fine job of reaching the application level of learning (Krathwohl, 2012). Focusing on application may encourage learning transfer because it allows the student to consider how to apply the information. It is one thing to think about a theory, but it is another to apply a concept. For example, I can synthesize everything that I have written here, and make it look very pretty in theory, but once I step onto the podium I may find that none of these theories work for me. In PME, the application of content, processes, and concepts play an essential role in learning transfer. That is why, I believe, the military is so successful in ensuring learning transfer.

Metacognition refers to the process of thinking about thinking. Metacognition supports learning transfer (Metcalfe, 1994). Even in the lowest level CES resident course, the Basic Course (BC), the Army introduces metacognition. The BC presents the concept of critical thinking. I have asked several future BC students what they think that critical thinking refers to, and their responses are typically elementary at best. The Army defines critical thinking as examining a problem in depth, from multiple points of view, and not settling for the first answer that comes to mind. To encourage critical thinking, PME teaches students the universal intellectual standards and elements of thought (Elder, 1995). Army leaders need this ability because many of the choices they make require more than one solution. Army logic implies that metacognition is a must in civil service.

In CES, metacognition and motivation occurs at a high level. Students are aware that the Army is investing many resources to provide them with the opportunity to develop leadership skills. Many students arrive at CES with at least one serious learning objective in mind. They know that PME is a key to escalated responsibilities, and possibly promotions. In short the payoff is more certain in PME than graduate education. Learning transfer is essential to both the

students and the organization. Academia possibly achieves a higher level of learning, PME strives for life-long learning.

Learning transfer should be the purpose of all PME, including CES. This study is the first step in understanding what CES should be teaching, at each level, how it is being used operationally, and why the civilian corps believes in these concepts. By understanding what transfers and what does not, both CES and the civilian corps will be able to focus resources for a more effective army.

Summary

CES learning objectives should be designed to transfer from the learning environment to the operational environment. Therefore the learning objectives should support the organizations operational strategy. This study examines how both students and faculty perceive the CES leadership learning objectives to support the leadership operational strategy. Once the comparison has been analyzed and interpreted, I will design courses of action to either support or realign the learning objectives. From this study, I should be able to draw ample conclusions to support future studies on how the curriculum transfers to the operational environment.

Chapter 3
Method

The intent of this study was to identify student and faculty perspectives on the importance of learning objectives to their understanding and practice of MC (empowerment), and second, how these two groups compare. If both groups identify these learning objectives as essential to the practice of Mission Command, then the US Army must take advantage and better leverage this opportunity. If this study finds that the learning objectives do not support the Mission Command strategy, then the US Army must discover why not and consider the effects of the gap between its leadership development and operational leadership.

This study utilized a ten question self- report survey (see Appendix A) to address the central research questions. The first three questions served as descriptive identifiers. Then seven questions asked the participant to rank how each learning objective supported her/his understanding and practice of Mission Command. Participants could choose one rank for each learning objective. Forcing the participant to select a rank for how each objective supports each principle of Mission Command should provide more accurate averages. I then compared the two sets of averages in order to understand is the two groups agreed or disagreed, and to what extent, on how the learning objectives support the principles of Mission Command. I also examined the Pearson correlation coefficient (r) to measure the relationship between how instructors and students compared the variables. I ran a series of T-tests using the Hoteling T^2 model to contrast the rankings. The survey was distributed at the end of the course manually.

The learning objectives and principles of MC are published and widely distributed. The researcher has no control over this information or its flow. Therefore, content validity is assumed not to be problematic. The reliability of the survey instrument was established. The first phase was to identify sixteen faculty, and ask them to complete the survey. One week after the

responses were collected these participants completed the process a second time. All identifying information was destroyed upon collection.

This study utilized two convenience samples. The first sample of BC alumni consisted of approximately 600 voluntary participants, but no less than 75 voluntary participants. The second sample consisted of about 50 past and present BC faculty, but no less than 20 voluntary participants.

Hotelling's T^2 analysis was conducted using SPSS version 23. SPSS computes Hotelling's Trace, which yields an identical F value and resulting significance test. The actual value of Hotelling's T^2 is the product of Hotelling's Trace and N-L where L is the number of groups: two in this case.

Reliability

To test the reliability of the instrument, thirty surveys were distributed twice to faculty, which have experience teaching the Basic Course, approximately three weeks apart. From the first distribution twenty-six responses were collected. Two of those responses were incomplete or unusable due to misunderstanding of the instructions. One survey was incomplete and one survey was misunderstood, resulting in the participant ranking multiple objectives using the same rank. The remaining four potential participants as well as the two unusable participants were reminded of the task; with no impact. From the second distribution of thirty surveys only twenty results were collected. The reliability test was run using twenty participants. (Raw data are shown in Appendix C).

Table 1
Reliability Data

	One	Two		One	Two
4. Mission Command			**8. Initiative**		
Development	2.68	2.18	Development	2.73	2.32
Problem Solvers	2.86	3.05	Problem Solvers	3.86	3.77
Communicate	3.45	3.55	Communicate	2.5	2.68
Character & Competence	2.77	2.08	Character & Competence	3.05	3.5
Leadership Principles	3.23	3.45	Leadership Principles	2.86	2.68
5. Build Trust			**9. Guidance**		
Development	1.73	1.64	Development	1.68	1.77
Problem Solvers	2.59	2.45	Problem Solvers	3.09	3.41
Communicate	3.77	3.55	Communicate	3.59	3.45
Character & Competence	3.32	3.6	Character & Competence	3.14	3.1
Leadership Principles	3.59	3.73	Leadership Principles	3.5	3.23
6. Shared Understanding			**10. Accepting Risk**		
Development	1.45	1.5	Development	1.68	1.91
Problem Solvers	3.18	2.82	Problem Solvers	3.82	3.73
Communicate	4.5	4.32	Communicate	2.59	2.55
Character & Competence	2.73	3	Character & Competence	3.64	3.5
Leadership Principles	3.14	3.41	Leadership Principles	3.27	3.32
7. Clear Intent					
Development	1.35	1.35			
Problem Solvers	2.96	3.04			
Communicate	4.48	4.3			
Character & Competence	2.78	2.8			
Leadership Principles	3.35	3.48			

Reliability was calculated for a test-retest sample of 20 individuals from the faculty sample. Spearman's rank order correlation coefficients were calculated between time one and time two, for each individual person, across their five ranked items: one coefficient was

calculated for each of the seven Principals. This resulted in 20 coefficients per principal, totaling 140 coefficients. Fisher's Z transformations were used to gain more accurate estimates of reliability. Tests of significance were conducted to test whether the correlations were significantly different from 0, and confidence intervals were computed.

Silver and Dunlap (1987) recommend using Fisher's Z transformations of correlations in computing the average correlation, rather than using the correlation values themselves. The authors found that this process leads to a less-biased estimate of the population correlation. Thus, in the present study, average correlations were computed by first converting individual test-retest correlations into Z values, averaging those Z values within each principal, and then transforming the average Z values back in to correlations.

The mean correlations, after using Z transformations as described above, are as follows:

Table 2
Mean Correlations

Mission Command:	0.774644685
Building Trust:	0.844057
Creating Shared Understanding:	0.89897
Clear Commanders Intent:	0.892281
Exercising Disciplined Initiative:	0.727485
Using Mission Orders:	0.825273
Accepting Prudent Risk:	0.828757

Citing the methodology, used in Hays (1973; pp 661-665), Z transformations were used to test for significance of the correlations, and used to compute confidence intervals. Each objective's average correlation was tested against the null hypothesis that correlations = 0 (i.e., that there was no correlation). All seven tests were significant at alpha = .05. Thus, I rejected the null hypothesis that the correlations are equal to zero (i.e., that there is no correlation).

It would have been beneficial to test the reliability of the instrument for the student group as well. I was unable to do so due to restrictions set by the US Army IRB. The Army would only allow me to survey the student demographic in person, by hand, and on the last day of the course. This restriction inhibited me from emailing the survey to the participants the second time in order to test reliability. The study proceeded based off of the strong reliability for the faculty group.

Response Rate

Following the reliability test, fifty surveys were distributed to AMSC faculty, regardless of experience teaching the Basic Course. Of the fifty surveys distributed thirty usable surveys were returned. Two additional surveys were returned, but considered unusable due to misunderstanding of the instructions which led the participants to rank multiple learning objectives with identical ranks per principle of Mission Command. With thirty returned and usable surveys out of fifty, the final response rate was sixty percent.

One hundred and ninety-two potential student participants from Army Management Staff College (AMSC) Basic Course's 16-003, 16-004, and 16-005 were offered an opportunity to participate in this study. Each course was broken down into four seminars of sixteen students. The survey was offered, with a brief explanation of the purpose, on the final day of the course.

During courses 16-003 and 16-004 I placed the surveys on a table in the middle of the room and left. This tactic elicited a response rate of about thirty percent. During the final course I needed the maximum participation, and so I opted to hand out the survey individually. This technique provided a response rate of seventy eight percent. From the three courses surveyed six surveys were considered unusable. One survey was returned partially completed, but with a note stating the participant could not rank the learning objectives because he believed they were each equally important. Two other surveys were only partially completed. The remaining three unusable surveys were due to misunderstanding of the instructions, which lead the participants to rank more than one learning objective with identical ranks. Of one hundred and ninety-two surveys distributed, ninety-four were returned usable for a response rate of forty nine percent.

Identifiers

For the purposes of this study, I was interested in two identifiers: students and faculty. However, I also gathered three additional pieces of identifying information for descriptive purposes. I have collected participant's organizational identifiers, prior service levels, and pay grades. Since my original proposal did not include these additional variables it is my intent to use this information in future analysis, but not for the current study.

Of the thirty faculty surveys collected, one hundred percent of the respondents identified TRADOC as the organization that they work for. This makes sense because every respondent works for AMSC, which falls under TRADOC. Of the thirty responses twenty-four participants identified their prior service level as commissioned officers. Only four participants identified as having no prior service, and two participants reported that they had enlisted prior service. The entire faculty is the same pay grade meaning that twenty-seven of these participants fell into the

GS10-13 pay scale bracket. Three faculty participants serve as course directors and fall into the GS14-15 pay scale bracket.

Table 3
Identifiers

Faculty						Students					
Organization		**Prior Service**		**Pay Grade**		**Organization**		**Prior Service**		**Pay Grade**	
TRADOC	**30**	Comm.	**25**	GS13	**27**	IMCOM	**39**	Comm.	**1**	GS01-05	**11**
		Enlist.	**2**	GS14	**3**	Other	**22**	Enlist.	**51**	GS06-09	**60**
		None	**4**			AMC	**13**	None	**41**	GS10-13	**22**
						MEDCOM	**8**	Warrant	**1**	GS14-15	**1**
						FORSCOM	**5**				
						TRADOC	4				
						USACE	**3**				

Of the ninety-four student responses thirty-nine participants identified as working for the Installation Management Command (IMCOM). Twenty-two identified as working for an organization that was unlisted (Other). Thirteen respondents reported working for the Army Mobility Command (AMC). Eight respondents worked for the Medical Command (MEDCOM). Five participants worked for the Army Forces Command (FORSCOM). Four participants worked for the Training and Doctrine Command (TRADOC). Finally three students worked for the U.S. Army Corps of Engineers (USACE).

Of ninety-four student respondents fifty-one participants reported their prior experience levels as enlisted. Forty-one participants indicated that they had no prior service experience. There was only one commissioned and one warrant respondent.

Of the ninety-four respondents sixty participants reported their pay grade as GS06-09. Twenty-two identified their pay grade as GS10-13. Eleven participants described their pay grade as GS01-05. Only one student reported a pay grade of GS14-15. This lone participant was also the only respondent to identify prior service as commissioned as well.

For this study, I have considered the principles of Mission Command as dependent variables, and the basic course learning objectives as independent variables. For the purposes of this study, the two classification variables chosen were faculty and students. As I have mentioned above, beyond this study it may prove beneficial to examine the results using the three additional identifiers: organizations, prior service experience, and pay grades to study any multi-variance.

The purpose and goal of this study was to understand how basic course learning objectives support the Mission Command strategy. The students are the group attempting to master the learning objectives. It was assumed that many of these concepts are new to the students. Students that can demonstrate proficiency of direct line leadership are often given equivalency credit, and move on to the next course. The faculty should be the subject matter experts (SME) on the course learning objectives, and the principles of Mission Command as well because it is leadership doctrine. Between these two populations there could be major similarities or differences of perspectives concerning connections and support. Surveying and considering both groups provided a better rounded explanation of how conditions for training and instruction interact.

Chapter 4
Data Analysis and Findings

In this chapter the data and its analysis is presented. Data was collected and processed in response to the problems posed in chapter 1 of this dissertation, which states three goals. The first goal was to identify how AMSC faculty viewed the Basic Course learning objectives in support of the Mission Command strategy. I surveyed the faculty twice in order to determine the reliability of the instrument, and found the instrument to be reliable ($r = .82$). Next, I surveyed the student group to identify how they viewed the Basic Course learning objectives in support of the Mission Command strategy. The third and primary goal of this study was to analyze how the student and faculty's perceptions of the Basic Course learning objectives support the Mission Command strategy, in comparison. All three objectives were accomplished.

Results

Each participant provided thirty-eight pieces of data to be analyzed. There are one hundred and twenty-four total participants in this study. This means that four thousand one hundred and seventy-two pieces of data was inputted, categorized, and analyzed using SPSS. The raw data was analyzed to produce means for both the faculty group and the student group. Below, in table three "Results Comparison", readers can view the means of each learning objective in comparison to its corresponding principle of Mission Command, for both students and faculty. The analysis, by design, is straight forward and understandable by any faculty or student reader who is interested.

A Hotelling's T^2 analysis was conducted, between students and faculty, on each of the six principals and Mission Command. The Hotelling T^2 analysis is a multivariate test, which tests for

differences between groups on an optimal composite of the relevant variables: this composite is optimal in that it maximizes group differences. In this case, the four learning objectives were the included variables in each composite. Thus, there was a comparison of students' composite on Mission Command with a composite of faculty composite on Mission Command, and so on for each principal. Only four of the possible five objectives were used for each comparison. Because the responses to objectives were ranked, once an individual had ranked four of the five principals, the remaining principal was determined; i.e., there are only four degrees of freedom within each principal. Thus, it was necessary to test the null hypothesis with only four objectives included in order to increase degrees of freedom. An objective was excluded, randomly, using a random function in Microsoft Excel. For Mission Command, communicate effectively was randomly dropped; for building trust, character and competence was dropped; for creating shared understanding, character and competence was dropped; for clear commanders intent, personal and professional development was dropped; for exercise disciplined initiative, critical thinking was dropped; for mission orders, basic leadership principles was dropped; and for accepting prudent risk, critical thinking was dropped.

Trends

Immediately, I noticed that the data show that both groups agreed on the most influential learning objective on five of the six principles of Mission Command. Likewise, the two groups agreed on the least influential learning objective on three of the six principles of Mission Command. Overall results indicate that both groups appear to agree that the learning objective "communicate effectively" is the most important aspect of understanding and practicing Mission Command.

Table 4
Results Comparison

	Faculty	Students		Faculty	Students
4. Mission Command			**8. Initiative**		
Development	2.43	3.24	Development	2.4	3.19
Critical Thinking	3.13	2.7	Critical Thinking	3.73	2.87
Communicate	3.5	3.18	Communicate	2.9	2.62
Character & Competence	2.93	2.85	Character & Competence	3.23	3.37
Leadership Principles	3	3	Leadership Principles	2.73	2.95
5. Build Trust			**9. Mission Orders**		
Development	1.73	3.09	Development	1.7	2.53
Critical Thinking	2.7	2.52	Critical Thinking	3.2	3.36
Communicate	3.9	3.18	Communicate	3.8	3.39
Character & Competence	3.4	3.11	Character & Competence	3.03	2.76
Leadership Principles	3.23	3.09	Leadership Principles	3.27	2.97
6. Shared Understanding			**10. Accepting Risk**		
Development	1.5	2.67	Development	1.7	2.93
Critical Thinking	3.2	2.76	Critical Thinking	3.8	3.57
Communicate	4.43	3.86	Communicate	2.67	2.52
Character & Competence	2.73	2.8	Character & Competence	3.6	3.18
Leadership Principles	3.13	2.91	Leadership Principles	3.23	2.8
7. Clear Intent					
Development	1.39	2.43			
Critical Thinking	3.19	2.68			
Communicate	4.45	3.82			
Character & Competence	2.81	3.02			
Leadership Principles	3.1	3.02			

Mission Command

Although both groups regularly chose "communicate effectively" as the most influential learning objective in their practice of Mission Command, they did not both choose this learning objective as most influential in their understanding of Mission Command. While the faculty did select "communicate effectively" as most influential (3.43) in their understanding of Mission Command the student group chose "personal and professional development" (3.24). However, the student group did select "communicate effectively" (3.18) as the second most influential learning objective for understanding Mission Command.

Interestingly, the student's top choice, personal and professional development (3.24), for understanding Mission Command was also the faculty's least influential (2.57) ranking. The faculty also ranked personal and professional development as the least influential learning objective in supporting their practice of Mission Command for all six principles of Mission Command. These findings indicated that the faculty view personal and professional development as least essential to empowerment as prescribed by Mission Command. In contrast, students understand that development in essential to their empowerment, but in practice, value effective communication over personal and peer development.

The student group indicated that critical thinking and understanding the Army Problem Solving Model is least influential (2.7) in their understanding of Mission Command. However, the faculty ranked critical thinking as second most influential (3.13) in their understanding of Mission Command. In chapter two I defined and described critical thinking using Army Doctrine and the Universal Intellectual Standards (UIS) that is used Army-wide in PME. The UIS is a tool used to guide users reasoning (Elder, 2007). The Army Problem Solving Model

(APSM) is a tool used to structure decision-making (FM 6-0). As noted in chapter two, empirical evidence suggests, students have a better understanding and appreciation for critical thinking than the APSM. There may be several factors affecting students understanding of each concept. Critical thinking is encouraged in the course from the first day, and the critical thinking lesson is taught on day three. Earlier implementation of the concept allows greater opportunity for near transfer. Critical thinking is reinforced in every activity that occurs during the course. The APSM is not formally introduced until the first day of the final week. There is an opportunity to leverage the APSM during "Problem Charge Two," which is the weekly group assignment. Instructors do not force students to use the APSM for the Problem Charge. Likewise, the concept is not reinforced in any of the remaining curriculum. Likelihood of transfer is low (Holton, 2003).

Learning objective two, demonstrate critical thinking and understand the APSM, includes two tasks. Because this learning objective encompasses two behaviors, it may be difficult to grasp, much less interpret. This learning objective appears to utilize two different levels of learning. "Demonstrate" implies that the student is expected to apply this concept. "Understand" infers that the students are required to reach a point somewhere on the knowledge/comprehension spectrum (Anderson, 2001).

The student group may not understand the importance which the faculty has placed on this learning objective because it includes two separate concepts. In contrast, the faculty may not have intended to place as much importance on this learning objective based on APSM. Perhaps the faculty believe that critical thinking is more influential in their understanding of Mission Command than the APSM.

Table 5

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.985	1918.933[b]	4.000	120.000	.000
	Wilks' Lambda	.015	1918.933[b]	4.000	120.000	.000
	Hotelling's Trace	63.964	1918.933[b]	4.000	120.000	.000
	Roy's Largest Root	63.964	1918.933[b]	4.000	120.000	.000
Status	Pillai's Trace	.066	2.112[b]	4.000	120.000	.083
	Wilks' Lambda	.934	2.112[b]	4.000	120.000	.083
	Hotelling's Trace	.070	2.112[b]	4.000	120.000	.083
	Roy's Largest Root	.070	2.112[b]	4.000	120.000	.083

a. Design: Intercept + Status

b. Exact statistic

As shown above in table 5, the Hotelling T^2 analysis indicates that the difference between the two group's rankings of how the learning objectives support understanding of Mission Command, are not significant ($p = .083$). To increase the degrees of freedom I randomly dropped one learning objective from each analysis. For Mission Command I randomly dropped the learning objective communicate effectively. Effective communication was the faculty's most influential learning objective supporting this strategy. I believe that if a different learning objective had been randomly dropped, this finding would appear significant.

Build Cohesive Teams through Mutual Trust

The faculty group ranked "communicate effectively" as the most influential (3.9) learning objective in their understanding and practice of building mutual trust. The student group also ranked communication as the most influential (3.18) learning objective in their understanding and practice of Mission Command. Although both ranked the same learning objective at the top

there is a considerable difference in the strength of their rankings F(3.9) versus S(3.19). This difference indicates that the faculty are convinced that effective communication has more influence on building trust that the students are.

The learning objectives that both groups ranked in the middle of the objectives are very close. Both groups ranked character and competence as second most influential and leadership principles as third. The student group ranked leadership principles and development as tied (3.09) for influencing trust.

The faculty ranked personal and professional development as the least influential (1.73) in building trust. This indicates that the faculty do not perceive how one develops themselves or others as particularly influential in building trust. With over a two point margin between the most influential learning objective, the faculty do not appear to have much confidence regarding development when building trust.

The student group ranked critical thinking as the least influential (2.52) learning objective that supports building trust. This indicates that critical thinking is not an important requirement for sustaining shared confidence and consistency (ADP 6-0). There is only a half point margin between the students' most influential ranking and least influential ranking. The small difference indicates that the student group more closely values every learning objectives' influence in building trust.

Table 6

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.981	1529.594[b]	4.000	121.000	.000
	Wilks' Lambda	.019	1529.594[b]	4.000	121.000	.000
	Hotelling's Trace	50.565	1529.594[b]	4.000	121.000	.000
	Roy's Largest Root	50.565	1529.594[b]	4.000	121.000	.000
status	Pillai's Trace	.134	4.684[b]	4.000	121.000	.002
	Wilks' Lambda	.866	4.684[b]	4.000	121.000	.002
	Hotelling's Trace	.155	4.684[b]	4.000	121.000	.002
	Roy's Largest Root	.155	4.684[b]	4.000	121.000	.002

a. Design: Intercept + status

b. Exact statistic

Because there was a main effect for the multivariate test (see table 6), the four objectives were analyzed in a post-hoc t-test analysis using Bonferroni correction for type one error. Four post-hoc tests were conducted, thus alpha was set to .05/4, or .0125. At the .0125 level of significance (calculated $p < .001$). There was a significant difference between students and faculty on learning objective One: Embrace personal and professional development for self and subordinates as part of the requirement for Army service. Faculty ranked this objective less influential than did the students.

Create Shared Understanding

The faculty group ranked effective communication, strongly, as the most influential (4.43) learning objective supporting their practice of Mission Command. Likewise, the student group agreed with an average score of (3.86). This was the strongest that the student group

ranked a learning objective for any principle of Mission Command. The apparent strong relation between effective communication and shared understanding is not surprising. While the Army does not define either term they describe the concepts mutually. Faculty and students appear to understand that the purpose of communication is to create shared understanding, per Army doctrine (ADP 6-0).

Again, the faculty group ranked development as the least influential (1.5) learning objective to support their practice of creating shared understanding. Once again there is consensus with the student group who also ranked this learning objective the least influential (2.67). 2.67 is one of the lowest mean rankings that the students assigned a learning objective. While students indicated that development is most influential in their understanding of Mission Command they do not believe that development is essential to their practice of creating shared understanding. Students and faculty may presume that they have reached full potential in their communication skills, and therefore do not require any further development.

Table 7
Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.988	2471.489[b]	4.000	121.000	.000
	Wilks' Lambda	.012	2471.489[b]	4.000	121.000	.000
	Hotelling's Trace	81.702	2471.489[b]	4.000	121.000	.000
	Roy's Largest Root	81.702	2471.489[b]	4.000	121.000	.000
V1	Pillai's Trace	.098	3.293[b]	4.000	121.000	.013
	Wilks' Lambda	.902	3.293[b]	4.000	121.000	.013
	Hotelling's Trace	.109	3.293[b]	4.000	121.000	.013
	Roy's Largest Root	.109	3.293[b]	4.000	121.000	.013

a. Design: Intercept + V1

b. Exact statistic

As in principal one, there was a main effect for the multivariate test (see table 7) on creating shared understanding, and Bonferroni correction was again used for post-hoc testing. In the resulting t-test, there was a significant variance between students and faculty on learning objective One: Embrace personal and professional development for self and subordinates as part of the requirement for Army service ($p = .001$). Faculty ranked this objective less influential than did students.

Clear Intent

The faculty ranked communicate effectively as the most influential (4.45) learning objective to support their practice of providing clear commanders intent. This was also the strongest ranking average that the faculty group administered. These averages indicate that the faculty think that effective communication is more influential to providing clear commander's intent (4.45) than creating shared understanding (4.43). These two principles of Mission Command are similar in nature, and in fact support each other. Although these rankings are very close, commander's intent may have gotten the edge because the majority of the faculty were commissioned, and have held command positions. Some students may have been confused in their understanding of the term "commander," and were unable to make the connection to leader.

The student group also ranked effective communication as the most influential (3.82) learning objecting supporting their practice of providing clear intent. The most influential ranking (3.82) is significantly stronger than the second most influential learning objectives which tied at (3.02), and were demonstrate character and competence and understand and apply

leadership principles. It is apparent to both groups that communicating effectively is important to providing clear intent.

Table 8
Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.986	2174.515[b]	4.000	120.000	.000
	Wilks' Lambda	.014	2174.515[b]	4.000	120.000	.000
	Hotelling's Trace	72.484	2174.515[b]	4.000	120.000	.000
	Roy's Largest Root	72.484	2174.515[b]	4.000	120.000	.000
Status	Pillai's Trace	.104	3.474[b]	4.000	120.000	.010
	Wilks' Lambda	.896	3.474[b]	4.000	120.000	.010
	Hotelling's Trace	.116	3.474[b]	4.000	120.000	.010
	Roy's Largest Root	.116	3.474[b]	4.000	120.000	.010

a. Design: Intercept + Status
b. Exact statistic

The multivariate test (see table 8) was significant (p=.01) however, none of the post-hoc t-tests were significant at the .0125 level. Critical thinking and effective communication approached significance (p=.037 and p=.044, respectively).

Exercise Disciplined Initiative

The faculty ranked critical thinking as the most influential learning objective (3.73) in their practice of exercising disciplined initiative. The faculty may be more broadly defining critical thinking. As noted in the literature review, critical thinking is only half of mental agility; the other half being creative thinking. By ranking critical thinking as being most influential in their practice of exercising disciplined initiative, the faculty may imply that they may be considering the term as synonymous with mental agility. This may indicate that the faculty value creative thinking in taking initiative, and in turn producing innovation.

The students ranked character and competence as the most influential (3.37) learning objective to support their practice of exercising disciplined initiative. This ranking could be because students perceive competence as a requirement for taking initiative. One must understand the desired end state, and how to achieve it in order to take initiative. Purpose is essential to this process. In order to feel empowered to take initiative employees must feel confident in the process and competent with the content (Morris, 1976).

Analysis of these overall findings indicate that two learning objectives in particular may cause confusion to both groups. Learning objectives "character and competence" and "leadership principles" consistently fall in the middle of the rankings. There appears to be some sense that these objectives have inspired meaning. Neither of these two objectives are ranked most or least influential for any principle of Mission Command. While they appear to be influential enough not to receive the lowest ranking, they also are not influential enough to gain the highest. This may be because the objectives are too subjective. For example, I know that character and competence sound important, but what does that really mean? Because these terms can be broadly defined or described it may be difficult to ascribe meaning or a ranking.

The faculty ranked development as the least influential (2.4) learning objective supporting their practice of exercising disciplined initiative. The students ranked effective communication as the least influential (2.62) learning objective supporting their practice of exercising disciplined initiative. These two rankings (2.4) and (2.62) are the most similar rankings for the least influential objective with a difference of only .22. Although the lowest objectives are different the smaller and similar margins between the learning objectives indicate that they are more equally influential in both groups practice of exercising disciplined initiative.

Table 9
Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.983	1698.088[b]	4.000	120.000	.000
	Wilks' Lambda	.017	1698.088[b]	4.000	120.000	.000
	Hotelling's Trace	56.603	1698.088[b]	4.000	120.000	.000
	Roy's Largest Root	56.603	1698.088[b]	4.000	120.000	.000
V1	Pillai's Trace	.083	2.712[b]	4.000	120.000	.033
	Wilks' Lambda	.917	2.712[b]	4.000	120.000	.033
	Hotelling's Trace	.090	2.712[b]	4.000	120.000	.033
	Roy's Largest Root	.090	2.712[b]	4.000	120.000	.033

a. Design: Intercept + V1
b. Exact statistic

The multivariate test (see table 9) was significant (p=.033) however, none of the post-hoc t-tests were significant at the .0125 level. Personal and professional development approached significance (p=.024)

Use Mission Orders

The faculty ranked effective communication as the most influential (3.8) learning objective in supporting their practice of using mission orders. Likewise, the students also ranked effective communication as the most influential (3.39) learning objective in supporting their practice of using mission orders. These findings are interesting, although perhaps unexpected, from the student group. Students do not discuss mission orders in the basic course nor did they have access to Army doctrine during time of the survey. As discussed in chapter two, mission orders is the process of providing guidance. Guidance could refer to initial orders such as "take that hill" or it could be more complex if the team has questions throughout the process. The students are not exposed to these ideas in the context of the term "mission orders" in the course.

The assumption that they were able to deduce similar meaning and intent as the faculty is noteworthy. The faculty did however rank communication higher (3.8) indicating greater confidence in their ranking.

The faculty ranked development as the least influential (1.7) learning objective in supporting their practice of using mission orders. The students also ranked development as the least influential (2.53) learning objective supporting the practice of using mission orders. Both groups agree that development has the least amount of influence on their understanding and practice of mission orders. The faculty's mean ranking of (1.7) indicate development has less of an influence on their use of mission orders than the students (2.53). This could be interpreted to mean a few different things: 1. The faculty believe that they are sufficiently developed to provide mission orders/guidance. 2. The students believe that they are fairly well developed in providing mission orders, but are not as confident as the faculty. 3. The students believe that their subordinates require more development in using mission orders than the faculty do. Based on the descriptive identifiers, the faculty are generally a higher pay grade, with more and a higher level of prior service than the students. This could imply that the faculty have more experience using mission orders in the military. Although the faculty may have greater experience using mission orders they have indicated that their subordinates do not require any development in this area. Recall that mission orders can not only serve as empowerment, but also as a limitation to empowerment.

Table 10
Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.984	1845.291[b]	4.000	120.000	.000
	Wilks' Lambda	.016	1845.291[b]	4.000	120.000	.000
	Hotelling's Trace	61.510	1845.291[b]	4.000	120.000	.000
	Roy's Largest Root	61.510	1845.291[b]	4.000	120.000	.000
Status	Pillai's Trace	.073	2.355[b]	4.000	120.000	.058
	Wilks' Lambda	.927	2.355[b]	4.000	120.000	.058
	Hotelling's Trace	.079	2.355[b]	4.000	120.000	.058
	Roy's Largest Root	.079	2.355[b]	4.000	120.000	.058

a. Design: Intercept + Status
b. Exact statistic

The multivariate test (see table 10) was not significant at the .05 level (p=.058). As with post hoc tests run for the other variables, a larger sample size may push this comparison to significance, as it is already approaching.

Accepting Prudent Risk

The faculty ranked critical thinking as the most influential (3.8) learning objective supporting their practice of accepting prudent risk. The students also ranked critical thinking as the most influential (3.57) learning objective supporting their practice of accepting prudent risk. Both groups appear more comfortable accepting risk when they have the ability to reason. This indicates that accepting risk is easier when they have time to consider options, outcomes, and second and third order effects. This also implies that they may be less inclined to accept risk if they lack the time or ability to apply critical thinking.

The faculty ranked development as the least influential (1.7) learning objective supporting their practice of accepting prudent risk. Understanding, authority, and decision-making usually occur during personal and professional development. Therefore it may be that the faculty do not believe that understanding, authority, or decision-making are requirements for accepting prudent risk. This seems counter intuitive to the faculty's belief that critical thinking is essential to accepting prudent risk because critical thinking empowers understanding and assists in decision-making.

The students ranked effective communication as the least influential (2.52) learning objective supporting their practice of accepting prudent risk. Communication is essential to creating shared understanding, and it can also be vital to assessing, and therefore accepting risk. The students ranking indicates that they are comfortable accepting prudent risk without input from supervisor, peers, or subordinates. If students feel comfortable in their authority and decision-making to accept prudent risk, this may be a strong indicator of how empowered the workforce feels.

Table 11
Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.981	1574.150[b]	4.000	119.000	.000
	Wilks' Lambda	.019	1574.150[b]	4.000	119.000	.000
	Hotelling's Trace	52.913	1574.150[b]	4.000	119.000	.000
	Roy's Largest Root	52.913	1574.150[b]	4.000	119.000	.000
Status	Pillai's Trace	.105	3.493[b]	4.000	119.000	.010
	Wilks' Lambda	.895	3.493[b]	4.000	119.000	.010
	Hotelling's Trace	.117	3.493[b]	4.000	119.000	.010
	Roy's Largest Root	.117	3.493[b]	4.000	119.000	.010

a. Design: Intercept + Status
b. Exact statistic

The multivariate test (see table 11) was significant at the .05 level (p=.010). A post-hoc t-test using Bonferroni correction for type 1 error resulted in one significant effect: Objective One was significant at the .0125 level (p<.001). Faculty ranked learning objective one, personal and professional development, as less influential than did students.

Summary

The overall rankings captured give us insight to the significance in which Mission Command is understood and practiced by the Army Civilian Corps. As identified in their rankings, the faculty generally have a stronger understanding and viewpoints on how the course learning objectives influence the operational environment. Both of the faculty's stronger and weaker rankings indicate a higher level of confidence in their choices and beliefs. Many of the students have just been introduced to these concepts for the first time. Although the students' rankings had less variance, the similarities to the faculty's responses indicate a common understanding and practice of the concept Mission Command.

Table 4, below, shows that the faculty's understanding and practice of Mission Command are very well aligned. The faculty ranked effective communication as the most influential learning objective in their overall understanding of Mission Command as well as in four of the six principles of Mission Command. These findings indicate that the faculty view effective communication as the foundation of Mission Command.

Table 12
Influential Comparisons

	Faculty	Students
4. Mission Command		
Highest	Communicate (3.5)	Development (3.24)
Lowest	Development (2.43)	Critical Thinking (2.7)
5. Build Trust		
Highest	Communicate (3.9)	Communicate (3.18)
Lowest	Development (1.73)	Critical Thinking (2.52
6. Shared Understanding		
Highest	Communicate (4.43)	Communicate (3.86)
Lowest	Development (1.5)	Development (2.67)
7. Clear Intent		
Highest	Communicate (4.45)	Communicate (3.82)
Lowest	Development (1.39)	Development (2.43)
8. Initative		
Highest	Critical Thinking (3.73	Character & Competence (3.37)
Lowest	Development (2.4)	Communicate (2.62)
9. Mission Orders		
Highest	Communicate (3.8)	Communicate (3.39)
Lowest	Development (1.7)	Development (2.53)
10. Accepting Risk		
Highest	Critical Thinking (3.8)	Critical Thinking (3.57
Lowest	Development (1.7)	Communicate (2.52)

The faculty were also clear in their assessment that personal and professional development are least influential in their understanding, and practice of Mission Command. Faculty ranked development as the least influential learning objective for both their overall understanding of Mission Command, and for all six principles of Mission Command. The survey questions for both the faculty, and the students were identical. For example, question four read: "Rank, in order, how each learning objective helped you to understand and/or practice Mission Command." Notice that I have underlined the word "you". Faculty may have ranked learning objective differently if their surveys would have asked your students. Example: Rank, in order, how each learning objective helped your students to understand and/or practice Mission Command. This approach was not ideal for this study; however, it may have influenced how the faculty ranked personal and professional developments influence in understanding and practicing Mission Command. In other words, the faculty may believe that because they generally have more experience with, and greater understanding of, Mission Command, that they do not require development. However, faculty may believe that their students require this development in order to understand and practice Mission Command; the Army does, and that is why these courses exist.

The two most influential rankings for the faculty, that were not effective communication, were critical thinking. Critical thinking is a major portion of the Basic Course coming only after feedback, which falls under effective communication. Therefore, it is not a surprise that faculty value the importance of critical thinking's influence on Mission Command.

There may be some discrepancy between the students understanding and practice of Mission Command. Whereas the students collectively ranked personal and professional development as most influential to their understanding of Mission Command, they did not rank

development as the most influential learning objective for any principle of Mission Command. However, the students did rank effective communication as a close second influential (3.18) learning objective in their understanding of Mission Command. Likewise, the students ranked effective communication as the most influential learning objective for four of the six principles of Mission Command. Students ranked personal and professional development as the least influential learning objective for three of the six, and effective communication for two of the six principles of Mission Command. There may be confusion in these student rankings. These rankings indicate that the students agree with the faculty that communication is a foundational learning objective to the practice of Mission Command; however, they may not fully understand the concept or intent of the operational strategy.

Chapter 5

Conclusions, Recommendations, and Discussion

The researcher sought to answer three research questions:

1. How do Civilian Education System (CES) Basic Course (BC) students rank the influence of the five BC learning objectives in supporting their understanding and practice of Mission Command? In my analysis, I found that students believe that the learning objective "communicate effectively by speaking and writing clearly, concisely, and persuasively," is most influential in their practice of Mission Command. Students may be unclear in their understanding of Mission Command. Students ranked personal and professional development as the most influential learning objective supporting their understanding of Mission Command. Effective communication was the close second influential learning objective. This small difference may indicate a possible gap between the understanding and practice of Mission Command.

2. How do Civilian Education System (CES) Basic Course (BC) faculty rank the influence of the five BC learning objectives in supporting their understanding and practice of Mission Command? In my analysis, I found that the faculty believe that the learning objective "communicate effectively by speaking and writing clearly, concisely, and persuasively," is most influential in both their understanding and practice of Mission Command. The faculty were also in agreement that the learning objective "embrace personal and professional development for self and subordinates as part of the requirement for Army service," was least influential in supporting their understanding and practice of Mission Command. Margin in rankings and consistency may indicate that the faculty have a better understanding, and more experience in using Mission Command.

3. How closely do Civilian Education System (CES) Basic Course (BC) students and faculty compare the influence of the five BC learning objectives in supporting their understanding and practice of Mission Command (empowerment)? Faculty and students disagrees on the most and least influential learning objective supporting their understanding of Mission Command. The faculty and students agreed on five of the most influential learning objectives supporting their practice of Mission Command. The faculty and students agreed on three (half) of the least influential learning objectives supporting their practice of Mission Command. The faculty appear to have greater confidence in how they believe that the Basic Course learning objectives influence their understanding, and practice of Mission Command.

Conclusions

The findings which supported these answers have led me to a few conclusions. First, how students understand and practice Mission Command are quite different. Students ranked personal and professional development as the most influential learning objective supporting their understanding of Mission Command. This may indicate that the student group may be in need of more training and education on the concept. The students proceeded to rank development as the least influential learning objective supporting their practice of three (half) principles of Mission Command. There appears to be a gap in between the understanding and practice of Mission Command that needs to be addressed.

Next, both the students and faculty indicated in their rankings, and is supported my analysis in the literature review, that there may be confusion with the combined learning objective "are problem solvers who think critically and understand basic Army Problem Solving Methodology." Thinking critically and problem solving are two separate concepts. Neither group appeared confident in their understanding of this learning objective. To exercise some

principles of Mission Command I need to exercise critical thinking (reasoning), and for others I need to utilize the Army Problem Solving Model (structure).

Learning objectives "demonstrate character and competence in the practice of direct level leadership" and "understand and apply basic leadership principles to effectively lead small teams," lacked a consensus meaning for both groups. While these appear, to both groups, to be important concepts in these objectives, there is no agreement on what the objectives mean. If I asked different people what "basic leadership principles" or "character and competence" are I would likely receive a wide range of responses because these terms are not defined nor described in the Basic Course.

The faculty appear to understand how both the learning objectives and Mission Command support each other. The students appear to appreciate the importance of each concept, but their collective rankings indicate that there may be some confusion as to how the ideas are designed to work together. Ranking development as the most influential learning objective to impact their understanding and practice of Mission Command as supports this conclusion.

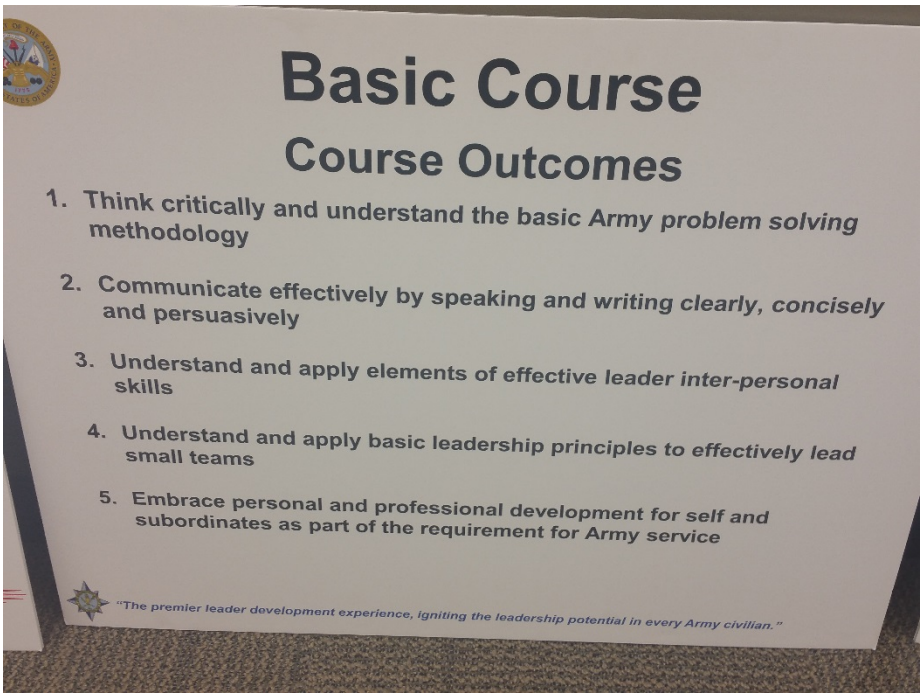
There appears to be confusion and/or concern as to the words that are used in the learning objectives. I have already mentioned the concern of the meaning of terms such as character and leadership. Words used in some of the learning objectives may not be clear. In some learning objectives the terms seem clearer, but may be taken to have different or greater meaning. The most obvious example is the learning objective which states critical thinking, but the faculty appear to treat the practice as encompassing mental agility.

During the course of this study, the Basic Course learning objectives changed two separate times. Most of the changes were not major, and no one appeared to even realize that changes were made. No rationale was provided for making these subtle changes to the learning

objectives. No discussion was held among the faculty. New poster boards depicting the learning objectives were put up in the classrooms, and just like that, the course changed without anyone realizing it. Four things to note on the new classroom posters: 1. The term outcomes is

Picture One

New Basic Course Outcomes Poster



being used. This implies that the course may not understand the difference between the terms "outcomes" and "objectives". 2. The "outcomes" have been re-worded so that each objective begins with a verb, as described by Bloom (Anderson, 2001). Character and competence has been replaced with effective leader interpersonal skills. Another study is needed to address the differences between interpersonal skills and leadership principles. Lastly, the learning objectives have been re-ordered. In the re-ordering, personal and professional development has been moved from first to last. This could have a profound effect on student's perceptions that development is the most influential learning objective supporting their understanding and practice of Mission Command (Lambert, 2015).

Recommendations

The gap between the understanding and practice of Mission Command must be filled for civilian army leaders. Mission Command is the Army's leadership strategy, and all leaders must understand and practice it. Army leaders cannot effectively and accurately practice Mission Command if they do not understand it. The Chief of Staff of the Army included the term "understand" into the strategy for a reason. "Understand" encouraged and influenced active army components, commissioned and enlisted, to include Mission Command into its PME curriculum. For many of the active duty leadership schools, Mission Command has become a major hot topic. For officers, every level of PME contains a major block of instruction specifically on Mission Command: The Basic Officer Leader Course (40hrs), the Captains Career Course (30hrs), Intermediate Leader Education (ILE), and The War College. For non-commissioned officers, every level of PME contains blocks of instruction on Mission Command, the Basic Leader Course (BLC) thru the Sergeants Major academy.

Currently there is not even a single lesson on Mission Command in the Civilian Education System (CES). If the civilian corps is considered a part of the profession of arms, with their active duty counter parts, and the CSA considers civilians army leaders too, then Mission Command needs to be taught in CES (Army, 2010). I propose that CES overhaul the Basic Course, which is the only CES resident course available to all army leaders. Instead of introducing learning objectives that are vaguely and indirectly related to the Mission Command strategy, the Basic Course should make the principles of Mission Command its learning objectives. I believe that this would clarify understanding, and encourage and enforce the practice of Mission Command among civilians, in the learning environment, as well as the operating environment.

Such a major overhaul to the Basic Course would take years to approve, design, and implement. During that time there are still things the course can do to improve the understanding and practice of Mission Command. Initially, there should be a lesson specifically designed for Mission Command. Beyond implementing awareness of the concept, the course needs to clean up its learning objectives.

Learning objectives should be separated. If the course is designed to teach students to think critically (application), and understand (knowledge/comprehension) Army Problem solving, then those need to be two separate learning objectives. The way it is written now, is not a learning objective because it does not begin with a verb, and contains two levels of learning. Likewise, understand and apply basic leadership principles should only use the term apply, since it is the highest level of learning (Anderson, 2001).

The Basic Course learning objectives should be clear and concise. If the course is designed to teach basic leadership principles, then the curriculum should clearly state and define what those principles are. Students should be able to easily access definitions and descriptions in army doctrine. If army doctrine does not cover a principle then there should be a separate reference point for the students and faculty. If the students are required to demonstrate character and competence then the course should define and provide examples beyond merely showing the Leadership Requirements Model (Sparks, 1997).

Lessons should not be treated as stand-alone in the CES Basic Course. Leadership requires understanding and practice of all of these concepts, and inherently they require each other's support. For example, personal and professional development can serve to create competence, and how does competence help students to apply basic leadership principles? A

deeper understanding of course topics, and their relationship to each other should enhance performance.

The words and terms used to craft the CES Basic Course learning objectives should be carefully considered. Curriculum writers should use terms from Army doctrine which can be easily defined or described. Using alternative, even academic, terminology creates confusion of and between concepts. The Basic Course is an Army course, based on Army concepts, and should be directly supported by Army doctrine (Sparks, 1997).

Discussion

This study has only scratched the surface, but it has uncovered important opportunities for the US Army's Civilian Education System. The Basic Course, in particular, can and should improve. Likewise, there are some ways that the results of this study can continue to improve and influence understanding and interpretation, in order to substantiate major changes to the curriculum. I intend to build from this study to add clarity of the concepts "understanding" and "practice", student and faculty interpretation, and pilot effectiveness. I also intend to use this, primarily quantitative, study to support a mixed methods study on learning transfer, to begin determining the potential return on investment to the US Army.

During the analysis of this study I gained important insights to the purpose of the curriculum. In the survey, I first asked both groups to rank how the learning objectives support their understanding and practice of Mission Command. The rest of the questions ask the participants to rank how the learning objects support their understanding and practice of the each principle of Mission Command. The intent was to see if the understanding and practice of the overall concept of Mission Command was similar to the principles which drive the concept. While analyzing and interpreting the data it occurred to me that there is a reason that the Chief of

Staff used both terms in his strategy “understand” and “practice”. As I considered the implications of these terms, I realized that the survey is asking something valuable which I did not intend. The first question, regarding the overall Mission Command concept, is providing insight to how participants understand the strategy. The following questions regarding how the learning objective support the principles of Mission Command are really providing insight into how the participants practice the strategy. By clarifying and refocusing the questions I think that I can gain additional insight into the gap between creating understanding of Mission Command, and practicing it.

This study was able to provide a reflection of faculty and students perceptions concerning how the Civilian Education System helps army civilians to understand and practice Mission Command. The next reasonable step to creating shared understanding of this phenomenon is by asking the participants why they chose the rankings that they did, and specifically how the learning objectives influenced the Mission Command strategy. I intend to ask these questions by conducting interviews with participants from both of the groups. Due to limitations of the availability of students, I am considering designing a class exercise in which the students would answer the interview questions in small groups. Understanding how and why may enable CES to better leverage, and fill the gap between understanding and practicing Mission Command.

Should my proposal to replace the Basic Course learning objectives with the Principles of Mission Command be considered, the army will require a pilot course. I would learn much more by operationalizing this idea. The effort of writing all new lesson plans, designing eighty hours of new presentations, and teaching a proof of principle should be an enlightening process for me, and for the army. This process will pose new questions and possibly new solutions.

The learning objectives are academic, and the strategy is operational. While ranking learning objectives in support of the operational strategy is a starting point, the army needs to provide a seamless education and training program that directly supports its operational strategy at all levels. To make this happen, the army needs to understand what students are transferring from the classroom and what they are not, why are certain concepts transferring and others are not, how behaviors are transferring, and how to encourage influential behaviors as well. In the context of how the army invests in training and education versus what army employees are operationalizing, the army should be concerned about the effectiveness of both its training and operational plan. The end game lies in learning transfer. If what the army is teaching is not in line with what it is supposed to be practicing, or the operational strategy is unachievable, then change needs to occur. The army should be interested in a study of learning transfer.

I have achieved a great deal with this study. There is still a lot of work to do. Just as the CES Basic Course teaches army leaders, awareness is the first step to influence, inspiration, and enlightenment.

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Appendix A: Survey

Basic Course Survey Information Statement

The Department of Curriculum and Teaching at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand if the CES Basic Course learning objectives support the US Army Mission Command Strategy. This will entail your completion of a survey. Your participation is expected to take approximately 5 minutes to complete. The content of the survey should cause no more discomfort than you would experience in your everyday life.

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the effectiveness that the learning objectives have in your understanding and practice of Mission Command. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. All identifiable information will be scrubbed from the instruments before any analysis occurs. All data shall be maintained in password protected government information systems at all times.

**It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response.*

If you would like additional information concerning this study before or after it is completed, please feel free to contact me at Thomas.a.wiggins.civ@mail.mil.

Completion of the survey indicates your willingness to take part in this study and that you are at least 18 years old. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email irb@ku.edu.

Sincerely,

Tom A. Wiggins
Principal Investigator
Department of C&T
JRP
University of Kansas
Lawrence, KS 66045
woundedjayhawk@ku.edu

Marc Mahlios, Ph.D.
Faculty Supervisor
Department of C&T
JRP
University of Kansas
Lawrence, KS 66045
mahlios@ku.edu

CAC-E Human Protections Admin.
usarmy.leavenworth.tradoc.mbx.lde-research-irb@mail.mil

The US Army Mission Command Philosophy entails the exercise of authority and direction by the [leader] using mission orders to enable disciplined initiative within the [leaders] intent to empower agile and adaptive leaders in the conduct of…operations. The philosophy of Mission Command is driven by six principles: 1. Build cohesive teams through mutual trust 2. Create shared understanding 3. Provide a clear commanders intent 4. Exercise disciplined initiative 5. Use Mission Orders 6. Accept prudent risk.

Please answer every question. Rank each objective, for each question, ranked 1 thru 5, using a different rank for every objective.

1. Identify the major Army command that you most closely work for or with.

- ○ TRADOC
- ○ FORSCOM
- ○ IMCOM
- ○ AMC
- ○ MEDCOM
- ○ USACE
- ○ Other (please specify)

2. Which best represents your level of prior service.

- ◯ None
- ◯ Enlisted
- ◯ Commissioned
- ◯ Warrant Officer

3. Identify the pay grade range in which you most closely identify.

- ◯ GS01-GS05
- ◯ GS06-GS09
- ◯ GS10-GS13
- ◯ GS14-GS15

4. Rank, in order, how each learning objective helped you to understand and/or practice Mission Command. "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

5. Rank, in order, how each learning objective helped you to understand and/or practice building cohesive teams through mutual trust. "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

6. Rank, in order, how each learning objective helped you to understand and/or practice creating shared understanding. "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

7. Rank, in order, how each learning objective helped you to understand and/or practice providing clear commanders intent (expectations). "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

8. Rank, in order, how each learning objective helped you to understand and/or practice exercising disciplined initiative. "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

9. Rank, in order, how each learning objective achieved helped you to understand and/or practice using mission orders (guidance). "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

10. Rank, in order how each learning objective helped you to understand and/or practice accepting prudent risk. "5" being the most influential and "1" being the least influential.

	Embrace personal and professional development for self and subordinates as part of the requirement for Army service.
	Are problem solvers who think critically and understand basic Army problem solving methodology.
	Communicate effectively by speaking and writing clearly, concisely and persuasively.
	Demonstrate character and competence in the practice of direct level leadership.
	Understand and apply basic leadership principles to effectively lead small teams.

Appendix B: Student Group Raw Data

1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
IMCOM	E	GS06-09	2	4	1	1	4	1	4	TRADOC	E	GS06-09	5	3	5	3	5	5	5
			3	5	4	4	1	4	1				1	2	3	2	1	1	1
			4	2	3	5	3	2	2				4	5	4	5	4	4	4
			1	1	2	3	2	3	3				3	4	2	4	3	3	3
			5	3	5	2	5	5	5				2	1	1	1	2	2	2
O/ATEC	N	GS06-09	3	2	1	3	5	4	5	IMCOM	N	GS10-13	3	5	5	1	4	1	2
			4	4	2	4	4	2	4				5	4	2	2	3	2	4
			1	5	5	5	3	3	1				4	3	4	4	5	5	5
			5	3	3	2	2	5	3				2	2	1	3	2	4	3
			2	1	4	1	1	1	2				1	1	3	5	1	3	1
MEDCOM	E	GS01-05	4	3	1	1	2	2	1	AMC	N	GS06-09	1	4	1	2	1	1	1
			1	2	4	3	4	4	3				3	1	2	1	5	5	5
			5	5	5	5	5	5	5				4	3	5	5	2	2	4
			2	1	2	2	1	1	2				2	5	3	3	4	4	3
			3	4	3	4	3	3	4				5	2	4	4	3	3	2
IMCOM	N	GS06-09	4	4	4	4	4	4	4	IMCOM	E	GS06-09	1	1	1	1	1	1	1
			1	1	1	1	1	1	1				2	2	2	2	2	5	5
			3	3	3	3	3	3	3				4	3	3	3	3	3	3
			2	2	2	2	2	2	2				3	4	4	5	5	2	4
			5	5	5	5	5	5	5				5	5	5	4	4	4	2
IMCOM	E	GS01-05	5	5	1	5	5	3	5	USACE	N	GS10-13	3	4	5	1	2	1	1
			4	4	4	4	3	5	4				2	2	2	4	3	4	5
			1	1	5	1	1	4	3				4	3	5	2	4	5	4
			2	2	2	2	4	2	2				1	1	1	5	5	3	3
			3	3	3	3	1	1	1				5	5	3	3	1	2	2
O/USARC	E	GS06-09	1	1	1	1	2	1	5	IMCOM	N	GS01-05	2	1	4	2	1	1	2
			3	2	4	4	3	4	1				5	2	1	4	5	4	4
			4	5	5	5	1	5	4				4	5	5	5	4	5	5
			5	4	3	2	4	3	3				3	4	3	3	3	3	1
			2	3	2	3	5	2	2				1	3	2	1	2	2	3
IMCOM	E	GS06-09	5	5	2	1	5	2	2	O/NETCO	E	GS06-09	2	3	1	1	1	1	1
			3	3	4	4	3	5	1				1	2	2	2	2	2	3
			2	4	5	5	2	3	3				4	1	3	3	3	3	2
			4	2	3	3	4	4	5				5	4	5	5	4	5	5
			1	1	1	2	1	1	4				3	5	4	4	5	4	4

O/USARC	E	GS06-09	4	5	5	5	5	5	5	AMC	E	GS06-09	5	1	5	5	5	5	5
			3	4	4	4	4	4	4				4	5	4	1	4	2	2
			5	3	3	3	3	3	3				2	2	1	2	3	1	1
			2	2	2	2	2	2	2				1	3	2	4	1	3	3
			1	1	1	1	1	1	1				3	4	3	3	2	4	4
MEDCOM	N	GS06-09	2	2	1	1	5	2	3	O / HRC	N	GS10-13	3	4	4	4	1	5	2
			1	1	3	5	1	1	5				2	3	1	1	5	2	3
			3	5	4	4	4	3	4				4	2	3	5	2	3	1
			5	3	2	2	2	4	1				1	5	5	3	3	4	4
			4	4	5	3	3	5	2				5	1	2	2	4	1	5
IMCOM	E	GS06-09	4	1	1	1	3	1	3	AMC	E	GS10-13	5	4	2	3	5	1	5
			1	2	3	2	1	4	5				2	1	4	1	2	4	2
			3	3	5	5	2	5	4				3	3	5	5	3	5	3
			2	5	2	3	5	2	1				1	2	3	2	4	2	4
			5	4	4	4	4	3	2				4	5	1	4	1	3	1
USACE	N	GS10-13	1	5	5	5	5	4	5	IMCOM	E	GS06-09	1	3	2	2	2	4	4
			4	3	4	2	4	5	4				2	2	4	1	1	3	5
			2	2	1	1	1	1	1				5	4	5	5	3	5	3
			3	1	2	3	2	3	3				4	1	3	3	4	2	2
			5	4	3	4	3	2	2				3	5	1	4	5	1	1
IMCOM	E	GS10-13	3	3	4	3	5	5	5	IMCOM	N	GS06-09	5	5	5	4	1	1	4
			1	1	1	1	1	1	1				2	1	1	2	3	5	5
			4	2	2	5	2	2	2				3	3	4	1	4	4	2
			5	4	3	4	4	4	4				4	4	3	3	2	3	3
			2	5	5	2	3	3	3				1	2	2	5	5	2	1
AMC	N	GS10-13	5	2	1	5	1	1	5	IMCOM	E	GS10-13	2	5	2	3	5	3	3
			2	1	3	4	2	2	2				5	2	1	1	4	4	5
			4	3	4	1	3	4	1				4	4	5	5	3	5	1
			1	5	2	3	5	3	4				3	3	4	4	1	2	2
			3	4	5	2	4	5	3				1	1	3	2	2	1	4
IMCOM	N	GS06-09	1	1	3	4	3	5	2	IMCOM	N	GS10-13	2	1	4	3	1	1	3
			2	3	4	1	1	1	5				4	3	1	2	5	5	4
			4	2	5	5	2	2	1				5	2	2	5	2	3	2
			5	5	1	2	5	3	3				3	4	5	4	3	2	5
			3	4	2	3	4	4	4				1	5	3	1	4	4	1
FORSCOM	N	GS06-09	1	1	1	1	5	5	1	IMCOM	E	GS06-09	4	5	5	1	1	3	2
			4	2	2	2	2	1	5				5	1	1	2	2	4	5
			5	3	5	5	3	2	4				1	2	3	5	5	5	4
			2	4	4	4	1	4	2				3	4	4	4	3	2	3
			3	5	3	3	4	3	3				2	3	2	3	4	1	1

IMCOM	N	GS10-13	5	4	4	1	1	1	2	O / USAPA	N	GS06-09	2	2	1	1	1	3	2
			3	3	2	5	3	5	5				3	3	5	5	2	2	3
			4	2	5	2	2	2	1				4	4	4	4	5	5	5
			2	1	1	4	4	3	4				1	1	3	3	4	4	4
			1	5	3	3	5	4	3				5	5	2	2	3	1	1
O/CHRA	N	GS01-05	5	2	4	3	1	2	4	IMCOM	N	GS06-09	5	1	3	1	1	1	3
			1	1	1	4	3	4	3				2	2	2	3	5	5	4
			3	3	5	2	2	5	1				4	4	5	5	2	3	2
			4	5	2	1	5	1	5				3	5	4	4	4	2	5
			2	4	3	5	4	3	2				1	3	1	2	3	4	1
FORSCOM	E	GS06-09	1	2	1	1	5	1	1	AMC	E	GS06-09	1	4	5	1	4	1	5
			2	3	4	3	2	2	4				2	5	3	4	2	4	2
			5	5	5	5	1	5	2				5	1	4	3	3	5	3
			4	1	2	2	4	3	3				4	2	1	2	1	2	1
			3	4	3	4	3	4	5				3	3	2	5	5	3	4
IMCOM	N	GS10-13	1	2	1	1	2	1	1	O / NETCC	E	GS10-13	2	1	1	3	5	3	4
			3	1	2	3	3	5	5				3	3	3	1	2	2	1
			4	5	5	4	1	3	2				1	5	5	5	1	5	3
			2	3	3	2	5	2	4				5	4	4	4	3	1	2
			5	4	4	5	4	4	3				4	2	2	2	4	4	5
O/NETCOM	E	GS10-13	4	5	2	3	5	5	5	IMCOM	N	GS10-13	2	3	4	1	3	1	3
			1	1	1	1	2	4	3				3	2	2	4	5	5	5
			5	4	5	5	1	3	4				4	4	5	5	4	4	4
			3	2	4	4	4	1	1				5	5	3	3	2	3	1
			2	3	3	2	3	2	2				1	1	1	2	1	2	2
IMCOM	E	GS06-09	2	2	1	4	3	4	4	MEDCOM	E	GS10-13	4	3	3	3	5	4	3
			5	3	4	3	4	1	2				2	1	2	2	1	3	5
			4	4	2	1	2	2	1				3	4	4	5	3	5	2
			3	5	5	5	5	5	5				5	5	1	4	2	2	4
			1	1	3	2	1	3	3				1	2	5	1	4	1	1
TRADOC	N	Gs06-09	4	5	5	2	3	5	3	O/ USARC	E	GS01-05	2	1	1	2	4	1	1
			1	2	3	3	1	4	2				5	3	3	3	3	4	4
			2	1	4	1	2	3	1				3	2	2	4	1	3	2
			5	4	2	4	5	2	5				1	5	5	1	5	2	5
			3	3	1	5	4	1	4				4	4	4	5	2	5	3
O/TEC	E	GS06-09	5	4	3	1	5	2	3	TRADOC	E	GS06-09	4	2	4	3	2	2	4
			2	1	2	4	3	5	2				2	1	1	2	4	3	5
			1	2	1	5	1	1	1				3	3	5	5	1	5	2
			3	5	4	2	4	4	5				5	5	2	1	5	1	2
			4	3	5	3	2	3	4				1	4	3	4	3	4	1

AMC	E	GS06-09	4	3	5	4	3	2	4		O	E	GS06-09	2	4	2	3	1	2	1
			5	2	3	2	5	5	5					1	5	5	1	5	5	4
			2	4	2	5	1	1	3					3	1	1	2	2	1	3
			3	5	4	3	4	3	2					5	3	4	4	4	4	5
			1	1	1	1	2	4	1					4	2	3	5	3	3	2
AMC	N	GS10-13	4	1	1	1	5	5	2		MEDCOM	E	GS06-09	1	1	2	3	4	1	1
			5	3	4	3	4	4	4					2	2	3	2	1	3	5
			2	2	5	5	1	3	1					5	5	5	4	3	2	4
			1	4	2	4	2	1	3					4	4	1	5	5	5	3
			3	5	3	2	3	2	5					3	3	4	1	2	4	2
AMC	N	GS06-09	4	4	4	5	4	4	2		IMCOM	E	GS06-09	4	1	2	4	4	4	5
			3	2	3	1	2	1	5					1	2	1	2	1	1	2
			5	3	1	2	1	2	1					2	4	5	3	2	2	1
			1	1	5	4	3	5	3					5	3	3	5	5	5	4
			2	5	2	3	5	3	4					3	5	4	1	3	3	3
IMCOM	N	GS06-09	2	4	2	2	1	1	1		AMC	E	GS06-09	1	1	1	1	5	1	5
			1	1	3	1	4	2	5					5	5	5	3	3	5	3
			4	5	5	5	3	5	2					3	4	3	5	4	3	4
			3	2	4	4	2	3	3					4	3	4	4	2	4	2
			5	3	1	3	5	4	4					2	2	2	2	1	2	1
MEDCOM	E	GS06-09	5	4	3	3	4	4	3		IMCOM	N	GS06-09	3	4	2	1	1	4	1
			2	2	1	4	1	1	5					2	2	1	2	4	1	5
			4	5	5	5	3	5	2					1	1	4	5	2	5	2
			1	1	2	1	2	3	1					4	3	5	3	5	2	4
			3	3	4	2	5	2	4					5	5	3	4	3	3	3
TRADOC	E	GS06-09	1	1	4	1	2	1	2		IMCOM	N	GS01-05	4	2	4	3	5	3	3
			2	4	1	2	1	2	3					3	1	1	5	1	5	2
			3	3	3	4	5	3	4					2	4	5	4	2	4	1
			4	2	2	3	3	4	1					1	3	3	1	3	1	5
			5	5	5	5	4	5	5					5	5	2	2	4	2	4
IMCOM	E	GS10-13	5	1	5	2	4	1	4		IMCOM	E	GS06-09	4	2	2	4	5	1	1
			3	4	4	3	2	5	5					1	3	4	2	3	4	3
			1	3	3	5	3	4	2					5	5	1	1	1	5	5
			4	2	2	4	5	2	3					3	4	3	3	4	3	4
			2	5	1	1	1	3	1					2	1	5	5	2	2	2
O/ATEC	N	GS06-09	5	2	2	1	1	3	1		IMCOM	E	GS06-09	2	5	1	4	3	3	5
			4	3	4	4	4	5	5					4	1	4	1	5	2	2
			1	1	3	5	2	2	2					5	4	5	5	4	5	4
			2	4	5	3	5	1	3					1	3	2	3	1	4	4
			3	5	1	2	3	4	4					3	2	3	2	2	1	3

USACE	WO	GS06-09	1	4	1	3	4	2	3		AMC	N	GS06-09	5	4	4	2	3	4	4
			5	3	3	2	3	4	2					3	2	1	4	5	5	5
			4	1	2	5	2	5	4					4	5	5	3	4	1	3
			3	5	5	4	5	3	5					2	3	2	5	2	3	1
			2	2	4	1	1	1	1					1	1	3	1	1	2	2
IMCOM	N	GS01-05	5	2	3	3	1	2	1		AMC	C	GS14-15	4	3	4	5	4	3	4
			4	4	4	4	5	4	5					5	5	5	3	2	4	5
			3	5	5	5	2	3	4					3	1	3	2	5	2	1
			2	3	1	1	4	1	3					2	4	2	4	3	5	3
			1	1	2	2	3	5	2					1	2	1	1	1	1	2
IMCOM	E	GS06-09	3	2	3	2	4	1	5		IMCOM	E	GS01-05	2	3	5	4	1	3	5
			1	1	2	1	1	4	1					1	5	1	3	4	2	1
			4	5	5	4	2	5	2					3	4	2	1	3	1	2
			2	3	1	3	3	3	4					5	2	4	2	5	5	4
			5	4	4	5	5	2	3					4	1	3	5	2	4	3
FORSCOM	E	GS06-09	2	4	2	5	4	4	4		MEDCOM	E	GS01-05	2	5	2	3	3	3	4
			5	5	5	2	1	2	1					5	4	5	4	5	5	5
			4	2	3	3	2	3	2					4	3	4	5	4	4	3
			3	1	4	1	3	1	3					3	1	1	1	1	1	2
			1	3	1	4	5	5	5					1	2	3	2	2	2	1
IMCOM	N	GS06-09	5	4	3	3	5	1	4		IMCOM	N	GS06-09	1	1	1	1	1	1	1
			1	1	2	1	1	5	1					2	2	4	4	2	2	4
			4	5	5	5	4	3	3					3	3	2	2	3	4	2
			2	3	1	4	2	2	2					4	4	3	3	4	3	3
			3	2	4	2	3	4	5					5	5	5	5	5	5	5
IMCOM	E	GS06-09	5	5	2	1	5	2	3		AMC	E	GS06-09	5	5	4	3	5	5	1
			3	4	3	3	3	3	4					1	3	5	4	3	3	2
			1	3	5	4	1	4	1					4	1	3	2	4	4	3
			2	2	4	2	2	1	5					2	4	2	1	2	2	4
			4	1	1	5	4	5	2					3	2	1	5	1	1	5
TRADOC	E	GS06-09	5	1	4	5	1	1	1		O	E	GS06-09	4	5	4	2	5	3	4
			2	2	5	4	3	2	2					2	4	1	3	3	1	5
			1	4	2	3	2	5	3					3	3	5	5	4	2	1
			4	3	3	1	5	3	4					1	2	3	1	2	5	3
			3	5	1	2	4	4	5					5	1	2	4	1	4	2
IMCOM	N	GS06-09	4	4	1	1	5	1	2		O / ATEC	E	GS10-13	4	5	1	2	1	2	1
			3	3	2	5	3	5	3					2	1	4	3	5	3	5
			5	1	5	2	2	4	1					1	2	5	4	2	4	3
			1	5	4	3	4	2	5					3	4	3	1	3	1	3
			2	2	3	4	1	3	4					5	3	2	5	4	5	2

O	N	GD06-09	5	3	1	1	5	5	3	IMCOM	N	GS10-13	5	5	1	1	1	2	2
			2	1	2	2	1	4	5				2	1	4	3	4	3	5
			3	4	5	4	2	1	2				3	4	5	5	3	4	3
			1	5	3	3	4	2	4				4	2	2	2	5	1	4
			4	2	4	5	3	3	1				1	3	3	4	2	5	1
IMCOM	N	GS06-09	3	3	1	3	4	4	3	FORSCOM	E	GS10-13	5	1	3	1	5	1	4
			5	5	2	2	1	1	4				1	2	2	2	3	2	5
			2	2	3	1	3	3	2				2	4	4	4	4	5	3
			1	1	4	4	2	2	1				3	3	1	3	2	4	2
			4	4	5	5	5	5	5				4	5	5	5	1	3	1
IMCOM	N	GS06-09	1	1	4	1	1	3	2	IMCOM	E	GS01-05	2	5	1	1	3	1	1
			3	3	1	5	5	5	5				5	2	4	3	4	5	5
			2	5	5	4	2	4	3				1	1	5	4	1	4	3
			4	4	2	3	3	2	1				4	3	2	5	5	2	2
			5	2	3	2	4	1	4				3	4	3	2	2	3	4
AMC	N	GS06-09	2	3	2	5	5	4	4	MEDCOM	E	GS06-09	5	4	5	3	5	4	4
			1	2	1	1	1	3	5				3	2	1	4	3	5	2
			5	4	3	2	2	2	3				2	3	4	2	2	3	1
			4	5	4	3	4	5	1				1	1	3	1	4	2	5
			3	1	5	4	3	1	2				4	5	2	5	1	1	3
O/USARC	E	GS10-13	1	5	2	1	1	1	1	AMC	E	GS10-13	5	4	3	4	5	3	5
			2	1	4	2	5	4	5				1	2	4	3	3	4	1
			4	3	5	5	2	5	2				2	3	1	2	1	1	2
			3	4	3	4	3	2	4				4	5	2	5	4	2	3
			5	2	1	3	4	3	3				3	1	5	1	2	5	4
O/OAA	N	GS06-09	5	5	1	1	3	1	1	O / NETCC	E	GS06-09	4	2	3	3	4	4	3
			1	2	3	2	5	2	5				2	4	4	5	1	5	1
			4	4	5	5	4	3	3				5	3	1	2	5	3	2
			3	1	2	4	2	4	4				1	5	2	4	2	2	5
			2	3	4	3	1	5	2				3	1	5	1	3	1	4
FORSCOM	E	GS06-09	5	5	5	5	5	5	5	IMCOM	N	GS10-13	5	5	3	1	1	3	4
			4	3	2	1	1	2	4				4	4	4	2	4	4	2
			3	2	1	4	4	4	2				1	3	5	5	3	1	3
			1	1	3	2	3	1	1				3	2	2	4	5	5	5
			2	4	4	3	2	3	3				2	1	1	3	2	2	1
TRADOC	N	GS10-13	4	5	3	3	4	3	2	IMCOM	E	GS01-05	1	1	4	1	1	1	1
			2	2	1	2	2	4	3				3	2	1	3	5	4	5
			1	4	5	5	1	2	1				2	3	5	5	2	5	3
			3	1	2	1	5	1	5				4	5	3	4	4	3	4
			5	3	4	4	3	5	4				5	4	2	2	3	2	2

MEDCOM	N	GS06-09	4	5	1	1	1	1	1
			5	4	4	2	3	3	4
			1	1	5	5	2	2	2
			2	2	3	4	4	4	3
			3	3	2	3	5	5	5

Appendix C
Reliability Raw Data

1st Attempt											2nd Attempt									
1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10
TRADOC	C	GS13	1	1	1	1	1	1	1		TRADOC	C	GS13	1	1	1	1	1	1	1
			2	2	4	5	5	5	5					2	4	2	2	3	2	3
			3	3	5	4	3	4	4					4	2	5	5	2	5	2
			4	5	3	3	2	2	3					5	3	4	4	5	3	5
			5	4	2	2	4	3	2					3	5	3	3	4	4	4
TRADOC	C	GS13	1	1	1	1	1	1	1		TRADOC	C	GS13	1	1	1	1	1	2	1
			4	4	4	3	3	4	5					4	3	3	4	3	4	5
			5	5	5	5	4	5	4					5	5	5	5	5	5	4
			2	2	2	2	2	2	2					2	2	2	2	2	1	3
			3	3	3	4	5	3	3					3	4	4	3	4	3	2
TRADOC	C	GS13	5	4	4	4	4	5	5		TRADOC	C	GS13	4	4	4	4	4	5	4
			4	5	5	5	5	2	1					5	5	5	5	5	1	1
			3	3	1	1	3	1	2					3	3	1	1	3	2	2
			1	1	2	3	1	3	4					1	1	2	3	2	3	5
			2	2	3	2	2	4	3					2	2	3	2	1	4	3
TRADOC	C	GS13	5	1	1	1	4	1	1		TRADOC	C	GS13	4	1	1	1	4	1	1
			3	3	2	3	2	3	5					3	3	2	3	3	3	5
			4	5	5	5	3	2	2					5	5	4	5	2	2	3
			2	2	3	2	5	5	3					2	2	3	2	5	4	2
			1	4	4	4	1	4	4					1	4	5	4	1	5	4
TRADOC	N	GS13	2	1	1	1	5	1	2		TRADOC	N	GS13	1	1	1	1	5	1	1
			4	2	3	4	4	5	3					4	2	2	3	4	5	3
			1	4	5	5	1	4	1					2	4	5	5	2	4	2
			3	5	4	3	2	2	5					5	5	4	2	3	2	5
			5	3	2	2	3	3	4					3	3	3	4	1	3	4
TRADOC	C	GS13	2	2	1	1	3	2	2		TRADOC	C	GS13	3	3	3	1	2	1	1
			1	3	4	4	4	1	4					2	2	4	5	5	5	5
			3	1	5	5	1	4	1					1	1	2	3	1	3	3
			5	5	2	2	5	5	5					4	5	5	2	4	4	4
			4	4	3	3	2	3	3					5	4	1	4	3	2	2
TRADOC	C	GS13	1	1	1	1	1	1	1		TRADOC	C	GS13	1	4	1	2	2	2	1
			2	2	3	4	2	5	5					2	1	4	3	5	5	4
			3	4	5	5	4	4	4					4	2	5	5	4	4	3
			5	3	2	2	3	2	3					3	5	2	1	1	1	2
			4	5	4	3	5	3	2					5	3	3	4	3	3	5

Reliability Raw Data
(continued)

TRADOC	N	GS13	2	3	2	2	3	2	1	TRADOC	N	GS13	2	3	2	2	3	2	1
			1	2	1	1	4	3	3				1	2	1	1	4	3	3
			4	5	5	5	2	5	4				4	5	5	5	2	5	4
			3	4	3	3	5	4	5				3	4	3	3	5	4	5
			5	1	4	4	1	1	2				5	1	4	4	1	1	2
TRADOC	C	GS13	3	3	2	2	5	1	5	TRADOC	C	GS13	4	1	2	1	4	1	5
			5	2	3	3	3	3	3				5	2	3	3	2	4	4
			4	1	5	5	2	4	1				2	3	5	5	1	3	1
			1	4	1	1	1	2	2				1	4	1	2	3	2	2
			2	5	4	4	4	5	4				3	5	4	4	5	5	3
TRADOC	E	GS13	1	1	1	1	4	2	1	TRADOC	E	GS13	1	1	1	1	2	5	4
			2	3	4	2	5	1	5				2	3	2	2	5	3	5
			4	4	5	5	2	3	2				4	5	5	5	3	2	1
			5	5	3	4	3	5	3				3	4	3	4	4	4	2
			3	2	2	3	1	4	4				5	2	4	3	1	1	3
TRADOC	C	GS14	2	2	1	1	1	1	1	TRADOC	C	GS14	1	1	1	1	1	1	1
			1	1	2	2	2	2	5				2	2	4	4	5	3	3
			3	3	5	5	3	5	2				4	4	5	5	3	5	2
			4	4	4	3	4	3	3				3	3	2	2	2	2	5
			5	5	3	4	5	4	4				5	5	3	3	4	4	4
TRADOC	C	GS13	3	2	1	1	5	1	1	TRADOC	C	GS13	3	2	1	1	1	1	2
			5	3	4	2	4	4	5				2	3	4	2	5	2	5
			2	5	5	4	1	2	2				4	1	5	5	2	3	1
			1	1	2	3	2	3	3				1	4	2	3	3	5	3
			4	4	3	5	3	5	4				5	5	3	4	4	4	4
TRADOC	C	GS13	2	2	1	1	1	1	1	TRADOC	C	GS13	1	1	1	1	1	1	1
			3	3	2	2	3	2	2				5	3	2	3	2	4	3
			4	4	4	4	4	4	4				2	2	4	2	3	3	2
			1	1	3	3	2	3	3				4	5	3	4	4	2	4
			5	5	5	5	5	5	5				3	4	5	5	5	5	5
TRADOC	C	GS13	5	1	1	1	1	1	1	TRADOC	C	GS13	1	1	1	1	1	1	1
			3	2	3	3	5	4	5				2	2	2	2	2	3	5
			4	4	5	5	4	5	3				3	3	5	5	3	5	4
			2	5	4	4	2	2	4				5	5	4	3	5	4	3
			1	3	2	2	3	3	2				4	4	3	4	4	2	2

Reliability Raw Data
(continued)

TRADOC	C	GS13	1	1	1	1	2	1	2	TRADOC	C	GS13	3	3	1	1	3	1	4
			3	2	4	4	5	3	3				1	1	2	3	1	4	1
			2	3	5	5	1	5	1				5	4	5	5	5	5	3
			4	4	2	2	3	2	4				2	2	4	2	4	3	2
			5	5	3	3	4	4	5				4	5	3	4	2	2	5
TRADOC	C	GS13	5	2	1	1	1	1	1	TRADOC	C	GS13	1	1	1	1	1	1	1
			1	1	2	2	5	5	4				3	3	4	5	5	5	5
			3	3	5	5	2	2	2				4	4	5	4	3	4	4
			2	4	3	3	4	4	5				2	2	2	2	4	3	3
			4	5	4	4	3	3	3				5	5	3	3	2	2	2
TRADOC	C	GS13	1	1	1	1	1	1	1	TRADOC	C	GS13	1	1	1	1	1	1	1
			3	3	3	3	3	3	3				3	2	2	2	2	2	2
			4	4	4	4	4	4	4				4	4	5	4	4	4	4
			2	2	2	2	2	2	2				2	3	3	3	3	3	3
			5	5	5	5	5	5	5				5	5	4	5	5	5	5
TRADOC	N	GS13	3	1	2	2	3	1	1	TRADOC	N	GS13	1	1	1	1	1	1	1
			2	2	1	1	4	3	4				5	2	2	2	4	4	4
			4	5	4	5	2	4	3				2	3	4	5	2	5	3
			5	4	5	4	5	5	5				4	5	5	4	5	3	5
			1	3	3	3	1	2	2				3	4	3	3	3	2	2
TRADOC	C	GS13	1	1	3	1	5	5	2	TRADOC	C	GS13	1	1	2	1	4	3	4
			3	3	4	3	4	4	3				3	2	1	2	5	4	5
			4	4	5	5	1	3	4				4	4	5	5	1	1	1
			5	5	2	4	3	2	5				5	5	3	4	3	5	3
			2	2	1	2	2	1	1				2	3	4	3	2	2	2
TRADOC	E	GS13	5	2	1	1	1	1	1	TRADOC	E	GS13	5	2	1	1	1	1	1
			3	1	4	4	5	2	5				3	1	4	5	5	2	5
			4	5	5	5	3	5	2				4	4	5	4	3	5	2
			1	4	3	3	4	4	4				1	5	3	3	4	4	4
			2	3	2	2	2	3	3				2	3	2	2	2	3	3

Appendix D
Z Score Transformations

The standard deviation, means, medians, minimums and maximums of the Z transformed variables, and of the r values (after conversion back into r form Z) are found in table 1. The 95% confidence interval can be computed using Z values by the equation: $\pm 1.96*\sqrt{(1/(N-3))}$ Using this equation, the 95% confidence intervals of the mean Z values were computed. These confidence intervals were converted to intervals for r. Both Z and r intervals are presented in table 2.

Table 1

	Principal 1	Principal 2	Principal 3	Principal 4	Principal 5	Principal 6	Principal 7
Z values							
median	0.87	1.47	1.47	1.47	0.87	1.17	1.47
mean	1.03	1.24	1.47	1.43	0.92	1.17	1.18
Standard Deviation	1.128694	0.923738	0.927837	0.714	0.940077	0.827433	0.821699
min	-1.10	-0.31	-0.31	0.42	-1.47	-0.20	-0.10
max	2.65	2.65	2.65	2.65	2.65	2.65	2.65
r values							
median	0.7	0.9	0.9	0.9	0.7	0.824195	0.9
mean	0.774645	0.844057	0.89897	0.892281	0.727485	0.825273	0.828757
Standard Deviation	0.810572	0.727661	0.729584	0.613179	0.735258	0.679095	0.675994
min	-0.8	-0.3	-0.3	0.4	-0.9	-0.2	-0.1
max	0.990066	0.990066	0.990066	0.990066	0.990066	0.990066	0.990066

Table 2, 95% confidence intervals of the mean correlation coefficients

	Principal 1	Principal 2	Principal 3	Principal 4	Principal 5	Principal 6	Principal 7
Z values							
Lower Limit	0.555559	0.758836	0.990543	0.956728	0.447084	0.69685	0.707874
Upper limit	1.508119	1.711396	1.943103	1.909288	1.399644	1.64941	1.660434
r values							
Lower limit	0.504675	0.640391	0.757594	0.742814	0.419499	0.602364	0.609342
Upper limit	0.906605	0.936819	0.959779	0.957026	0.885275	0.928777	0.930276