2015

The Influence of the Ready Intelligence Program on Crewmembers' Perception of Proficiency in an Air Force Weapon System

James Martin Bane
Walden University

Walden University

COLLEGE OF EDUCATION

This is to certify that the doctoral study by

James Bane

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Clifton Addison, Committee Chairperson, Education Faculty
Dr. Debra Beebe, Committee Member, Education Faculty
Dr. Sara Rofofsky Marcus, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2015

Abstract

The Influence of the Ready Intelligence Program on Crewmembers' Perception of Proficiency in an Air Force Weapon System

by

James M. Bane, III

MA, TUI University, 2009

BS, Clarion University, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

April 2015

Abstract

A lack of evaluation and evidence of effectiveness prompted this study of the Distributed Common Ground System's (DCGS) proficiency maintenance tool, Ready Intelligence Program (RIP). The goal was to close the gap between research and practice and inform stakeholders at the local Distributed Ground Station (DGS) of evaluation results. Guided by a logic model as the theoretical foundation, this study examined how proficiency is perceived by DCGS crewmembers because of RIP at a military installation with intelligence, surveillance, and reconnaissance missions. This qualitative study used an outcomes-based program evaluation report based on interviews with 5 crewmembers, observations of program participant activities, and reviews of training documents and program reports. Data were transcribed into NVivo 10 for organization, and inductive code words and categories were applied. Data interpretations were confirmed via triangulation and then sent to the participants for member-checking. An external evaluator reviewed the study's methodology, data, and findings for veracity. The project that resulted from the study was a program evaluation report that identified 4 overarching themes. It was concluded that (a) there was a lack of awareness of RIP, (b) RIP had minimal impact on perception of proficiency, (c) the program was occasionally applied ineffectively, and (d) management of the program was insufficient. It is recommended that existing RIP training be emphasized to crewmembers to increase awareness. Additionally, an ongoing program evaluation is recommended with a quantitative measure of proficiency achievement. This study promotes social change by improving attitudes toward positional proficiency and RIP as a maintenance tool, improving program maintenance, and facilitating regular program evaluations.

The Influence of the Ready Intelligence Program on Crewmembers' Perception of Proficiency in an Air Force Weapon System

by

James M. Bane, III

MA, TUI University, 2009

BS, Clarion University, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

April 2015

Dedication

For my wife. May we reclaim the time that should have been ours and spend our future together, raising our children to know what it means to have quality time with one another.

Acknowledgments

I would like to thank my family, friends, and co-workers who have stood by my efforts to achieve this milestone. My wife, Casey, has been the primary supporter of my goals since we met and has motivated me to persevere. She is the foundation upon which I am able to grow as a husband, father, and scholar-practitioner. My friends and co-workers have also supported my efforts and encouraged me throughout this journey when feeling inundated with the stresses of work, school, and life in general. Next, I would like to thank my doctoral committee Dr. Clifton Addison, Dr. Deborah Beebe, and Dr. Sara Rofosky Markus for their assistance and inspiration. Dr. Addison in particular has provided encouragement on a number of occasions when I was feeling overwhelmed with the amount of work involved with this project. Finally, thank you to the participants and site leadership who allowed me to use this program evaluation as my doctoral project. Without their participation, this project would not have been possible.

Table of Contents

List of Figures

Section 1: The Problem

This doctoral study focused on the Ready Intelligence Program (RIP) and the lack of evidence of program evaluation that would validate its effectiveness at maintaining crewmember proficiency within the Distributed Common Ground System (DCGS). This first section contains a clear definition of the problem, a rationale for the study, and special terms associated with this problem. This section also covers the significance of the problem in historical, local, and larger educational contexts, along with the research question that guided the study. The final part of Section 1 is a review of literature covering the theoretical framework of the study as well as an overview of proficiency, its various applications, and the importance for proficiency standards and assessment methods.

Definition of the Problem

This study was prompted by a lack of empirical evidence showing whether the desired RIP outcome had been met. RIP is a program intended to ensure the proficiency of essential tasks within an intelligence, surveillance, and reconnaissance (ISR) community, known as the DCGS (Air Force ISR Agency, 2013b). Within DCGS are several mission crew positions; these are jobs that require thorough knowledge of, and familiarity with, specific tasks. These tasks ensure that ISR missions are carried out with success and with minimal safety or security violations. The Air Force (AF) DCGS setting is a fast-paced environment where crewmembers conduct ISR activities during a variety of missions in support of current operations.

Personnel work collaboratively through an initiative known as Total Force Integration (TFI). Active duty and air reserve components (ARC)—Air Force Reserve and Air National Guard (ANG)—work together toward common, federal goals in a TFI environment. The RIP program has been established as a subset of the continuation-training program in order to maintain proficiency of duties.

The intent of RIP is outlined in AF Instruction (AFI) 14-202, Volume 1, as ensuring that proficiency in assigned duty positions is maintained through the performance of specific mission-essential tasks with sufficient frequency (Air Force/A2FM, 2008). With no data demonstrating that the proficiency outcome is being met, it is unknown whether RIP is effective. A gap in practice exists because a program is being used at the local level as the primary source of maintaining proficiency and no assessment of its outcome is available. Depending on how widely used RIP is as the method of maintaining proficiency (considering the 45 geographically separated, networked sites) a larger, AF-wide, problem may exist, (Air Force ISR Agency, 2011). Furthermore, as RIP is the foundation of future simulation training, knowing whether its intended outcome is being met will help achieve success in future applications (B. Braithwaite, personal communication, 2012).

RIP is an AF requirement levied by Headquarters AF Intelligence (Air Force/A2FM, 2008). The program is further defined by the next lower major command, AF ISR Agency, which outlines the specific tasks and periodicity at which tasks must be carried out in order to maintain proficiencies (Air Force ISR Agency, 2013b). Individual units are left to their own devices to accomplish the tasks as they see fit (whether

experienced live, simulated on case-by-case bases, or entirely simulated; and whether the tasks are experienced once every 90 days at some locations or more often at others; Air Force ISR Agency, 2013b).

In the larger context, proficiency is used across the AF in both the flying community and for other personnel competencies. Proficiency can be found in language, transportation, and maintenance career fields. An understanding of how proficiency is perceived in the DCGS community may have implications that stretch AF-wide.

Rationale

Evidence of the Problem at the Local Level

This problem was chosen because of the importance of proficiency as it relates to mission success and implications of personnel safety. RIP was implemented as a tool to ensure crewmembers are capable of performing specific tasks in the event they are not experienced regularly in real-world situations. Data addressing the RIP were limited to local and higher headquarters (HHQ) published instructions—AFI 14-202 V1, Intelligence Training and AFISRA 14-153 V1, Air Force Distributed Common Ground System (AF DCGS) Training Program—and outlines generic definitions with no documented evidence of effectiveness (Air Force ISR Agency, 2013b; Air Force/A2FM, 2008). Several conversations confirmed suspicions that a program evaluation was lacking to determine if the RIP outcome was being met (B. Braithwaite, personnel communication, December 2012; E. Arroyo, personal communication, January 2013; J. Wolverton, personal communication, December 2012).

The purpose of this qualitative study was to evaluate RIP to determine if proficiency was perceived to be maintained via currently implemented practices. During this study, I looked at participants directly involved with the program, either through program management or as a beneficiary of the program, to gain insight into the program's effectiveness. The summative, outcome-based evaluation results were used to inform future practice through a program evaluation report; the findings were perceived to have had a critical impact on the safety, security, or overall effectiveness of mission operations or on the program being evaluated were to be formatively reported to stakeholders for immediate action. However, no such events occurred. This project study was the first program evaluation conducted on RIP; thus, it yielded data important to the assessment and management of proficiency within the DCGS community.

Evidence of the Problem from the Professional Literature

Data addressing proficiency was found throughout the literature in a number of fields, including medical, sports, military, and linguistics. Proficiency in the military has been a subject of interest for pilots in aviation for several decades, dating back to World War I (Stillion, 1999). When the ISR community created DCGS, they adopted the proficiency concept for its various crew positions; however, no literature exists specifically describing the local issue of proficiency regarding RIP. Therefore, literature from current military instructions, military journals, and historical government documents were used to inform this study and provide sufficient context as it relates to perceptions of proficiency.

Definitions

Certification: "The status of a crewmember who has satisfactorily completed training prescribed to maintain the knowledge and skills necessary to supplement qualifications. Certifications are attained through methods other than evaluation and are verified by an instructor" (Air Force ISR Agency, 2013b, p. 36).

Chain of command: "The succession of commanding officers from a superior to a subordinate through which command is exercised" (Department of Defense, 2010, p. 35)

Classic associate: "A Regular Air Force unit retains principal responsibility for a weapon system or systems and shares the equipment with one or more reserve component units. Under the classic associate structure, active-duty and reserve units retain separate organizational structures and chains of command" (Air Force Reserve Command, 2013, p. 1).

Continuation training (CT): "Continuation Training provides the volume, frequency, and mix of training necessary for mission crews to maintain proficiency in their assigned qualification level. It consists of local and difference training and the Ready Intelligence Program (RIP). CT is separate from skill level upgrade training, although CT may fulfill some skill level upgrade training requirements" (Air Force ISR Agency, 2013b, p. 36).

Crewmember: Personnel manning DCGS weapon system position(s) and held to standards of DCGS qualification and currency (Air Force ISR Agency, 2013b).

Critical area: "A critical area is a designated area that is absolutely necessary for the success of the mission where failure to follow the strict requirements of

instructions/regulations, safe operations or conduct could compromise the mission" (Air Force ISR Agency, 2013a, p. 96).

Currency: "A measure of how frequently and/or recently a task is completed. Currency requirements should ensure mission crews maintain a minimum level of proficiency in a given event" (Air Force ISR Agency, 2013b, p. 36).

Drill-status guardsman: Officer or enlisted members of the selected reserve who assemble for drill and instruction at least 48 periods (each period is a four-hour block and four four-hour blocks typically make one weekend) per year and 15 additional days for annual training (Headquarters Air Force, 2007).

Geospatial analyst: A DCGS entry-level crew position responsible for carrying out imagery intelligence duties (Air Force ISR Agency, 2013c).

Go/no-go: A program used to ensure all training and standardization and evaluation criteria are met prior to releasing crewmembers to work live missions (Air Force ISR Agency, 2010).

High altitude: "High altitude refers to ISR mission flown at an altitude of fifty thousand feet or greater" (Air Force ISR Agency, 2013c).

Imagery intelligence (IMINT): "The technical, geographic, and intelligence information derived through the interpretation or analysis of imagery and collateral materials" (Department of Defense, 2010).

Instructor: "An experienced crewmember qualified to instruct others in operations, academics and positional duties. Instructors can certify training completion on appropriate mission documentation" (Air Force ISR Agency, 2013c).

Instructor rated operator (IRO): A term historically used in the DCGS weapon system to identify a crewmember as an instructor in a particular mission position. See Instructor.

Intelligence, surveillance, and reconnaissance (ISR): "An activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations. This is an integrated intelligence and operations function" (Department of Defense, 2010, p. 141).

Medium altitude: "Refers to ISR missions typically flown from an altitude of eight thousand feet (unless otherwise stipulated by the Air Control Order) up to an altitude of fifty thousand feet" (Air Force ISR Agency, 2013c).

Mission(s): Mission is briefly defined as a) a specific task/purpose with clarified actions and reason, b) duties assigned to a unit, and c) dispatching aircraft to accomplish a task (Department of Defense, 2010). In the DCGS context, a mission generally refers to the period when at least one platform (aircraft with ISR capabilities) is dispatched and collecting data with a complement of DGS crewmembers conducting ISR PED.

Mission hours: "Mission Hours are calculated as those hours within the mission duty period when a current and qualified crewmember is performing mission in an AF DCGS crew position and actively performing the duty associated with their crew specialty including pre- or post- mission duties, transcription time and off-line mission operations in support of time sensitive reporting" (Air Force ISR Agency, 2013c).

Operation(s): Military, tactical action(s) carrying out a "strategic, operational, tactical, service, training, or administrative" mission (Department of Defense, 2010, p. 206).

Platform: An aircraft upon which intelligence sensors are mounted for the purpose of collecting intelligence data (imagery, signals, communication, etc.) (Department of Defense, 2010).

Processing, exploitation, and dissemination (PED): Converting collectible information into usable intelligence and delivering finished products to requestors (Department of Defense, 2010).

Proficiency: In the DCGS context, proficiency is seen as "the quality of having competence and a command of the fundamentals derived from practice and familiarity. A measure of how well a task is completed. An individual is considered proficient when he/she can perform tasks at the minimum acceptable levels of speed, accuracy, and safety" (Air Force ISR Agency, 2013b, p. 29). Sufficient frequency is outlined as once every 90 days to maintain combat mission ready (CMR) status and once every 180 days to maintain basic mission capable (BMC) status (Air Force ISR Agency, 2013b).

Qualification: Having been trained in and holding a DCGS-specific crew position (Air Force ISR Agency, 2013a).

Readiness: "The ability of military forces to fight and meet the demands of assigned missions" (Department of Defense, 2010, p. 232).

Ready intelligence program (RIP): RIP is a component of continuation training which is designed to focus training on capabilities needed to accomplish a unit's core

tasked missions (Air Force ISR Agency, 2013b). The idea of RIP is that crewmembers complete a set of tasks specific to their DCGS crew positions, in addition to periodic evaluations (once every 17 months or sooner), in order to maintain currency, qualification, and ultimately, proficiency in those positions (Air Force ISR Agency, 2013b).

Signals intelligence (SIGINT): "1. A category of intelligence comprising either individually or in combination all communications intelligence, electronic intelligence, and foreign instrumentation signals intelligence, however transmitted. 2. Intelligence derived from communications, electronic, and foreign instrumentation signals." (Department of Defense, 2010).

Sortie: "A flight/sortie begins when the aircraft begins to move forward on takeoff. It ends after airborne flight when the aircraft returns to the surface and any of the following conditions occur:

(1) The engine is stopped, or any engine on a multiengine aircraft, [except as required on CAPF 5 evaluations].

(2) A change is made in the crew which enplanes or deplanes a crewmember. A single flight may include multiple take-offs and landings

(3) The last landing on a cadet's first solo flight

(4) The glider comes to rest after landing" (National Headquaters Civil Air Patrol, 2012, p. 4).

Total force integration: "The purpose of TFI is to generate efficiency and cost savings by sharing resources, reducing duplication of efforts and, in some cases, reducing

the number of people needed to accomplish a task. TFI provides contingency surge capability" (Air Force Reserve Command, 2013, p. 1).

Traditional Air National Guard member: See Drill-Status Guardsman.

Weapon system: "A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency" (Department of Defense, 2010, p. 305). While DCGS is a weapon system, other notable weapon systems include aircraft such as the F-22 Raptor, the F-16 Fighting Falcon, and so on.

Significance of the Study and Guiding Question

During WWI, pilots were taught combat tactics only after they arrived in theater and those who survived early combat gained critical experience that enhanced their chances of later survival (Levy, 2006). The first attempt at a program to maintain these skills was by identifying the "minimum number of hours and events (such as instrument landings and night flying), which a pilot was required to complete in each six month training period" in Air Force Regulation 60-1 (Carleton as cited in Levy, 2006, p. 10). This method of skill maintenance was later evolved into the Ready Aircrew Program (RAP), which is used today in the flying community after having undergone evaluation to determine its effectiveness (Levy, 2006).

A similar chain of events occurs within the intelligence community, where analysts arrive at the DCGS with basic skills and, upon arrival, are introduced to the classroom again to learn local tactics, techniques, and procedures (Operations Support Training, 2012). Then, after all initial training is complete, analysts begin working real-

world missions. During real-world missions, critical experiences cultivate analytical abilities and enhance later success. Analysts are immediately required to maintain skills associated with their respective crew position(s) via RIP, which, like RAP, associates a minimum number of events to be completed within a given period. However, because no research has been conducted on perceptions of proficiency because of RIP, the effectiveness of RIP is unknown. This has led to a gap in research: RIP and crewmember proficiency—and the practical use of the program to maintain proficiency—have not been evaluated.

In an attempt to maintain proficiency, both RIP and RAP have similar characteristics but RIP appears to be more restrictive. For example, RIP maintains requirements for individuals identified as Combat Mission Ready (CMR) to accomplish core tasks once every 90 days (Air Force ISR Agency, 2013b) as compared to RAP's semiannual requirement (Levy, 2006). Another example includes individuals maintaining Basic Mission Capable (BMC) status. Under the guidance of RIP, BMC individuals are required to complete tasks with a cycle of 180 days (Air Force ISR Agency, 2013b), while RAP requires annual completion (Levy, 2006). The more restrictive requirements of RIP stand to increase proficiency across this intelligence community; however, they may not be restrictive enough. During interviews conducted in past research by Levy of the RAND corporation, when asked how many times F-16C pilots should experience core tasks to be ready for immediate combat a common response of fighter pilots was 13 per month (Levy, 2006). Implications of Levy's survey results may affect not only the perception of proficiency associated with RIP but also the educational methods used to

ensure that proficiency is maintained (e.g., additional instructor-led classroom events, real-world experiential learning, instructor led simulated learning, etc.).

The methods by which analysts' skills are maintained do not always include real-world application because some events occur infrequently. For example, search and rescue missions are not events that can be planned to occur regularly, nor would that be desired. To comply with RIP, analysts must have alternate exposure to certain events, to include simulation or other methods of training.

By addressing this problem, an evaluation was prompted that will be useful to the local educational setting by determining to what extent analysts and program managers feel that current RIP practices (i.e., methods of training) are effective in maintaining proficiency. In a larger context, the study offers insight as to how proficiency is managed across the AF DCGS, since RIP is an AF-wide mandated program for all AF DCGS qualifications. As RIP has ties with RAP, there may also be potential implications for the management of pilot proficiency.

The guiding question for this problem asks: How is proficiency perceived by DCGS crewmembers because of RIP at a military installation with ISR missions?

Review of the Literature

This literature review used the following online databases: Science Direct, ProQuest Central, and Academic Search Complete. The results were filtered to show information from 2009 to present. Boolean search phrases were used to gather results applicable to proficiency without overloading a particular topic. For example, there is an abundance of articles on language proficiency in scholarly journals; using the Boolean

phrase, "ALL (Proficiency) NOT (Language)" restricted the results to articles pertinent to this study. Additionally, relevant information on proficiency was gathered from dissertations, news articles, and military publications. Keywords used included *outcome based logic model*, *logic model limitations*, *proficiency*, *proficiency program evaluation*, *simulation* and *proficiency, military proficiency, proficiency theory, proficiency maintenance, ready aircrew program, ready intelligence program, Air Force proficiency,* and *proficiency assessment.*

This literature review is split into two sections: the theoretical framework of the project study and the various applications of proficiency throughout a variety of fields.

Theoretical Framework

Logic modeling is used by illustrating program components, demonstrating how components link together, and determining a program's success (Knowlton & Phillips, 2013). Due to a program evaluator's ability to use the logic model to evaluate programs at any stage of development or implementation (McLaughlin & Jordan, 2010; W.K. Kellogg Foundation, 2004), it is an appropriate framework for this project study. The theoretical framework that informs this project is the logic model.

Logic modeling enables a clear understanding of the program being evaluated by showing linkages of various program aspects and underlying assumptions. The logic model helped determine whether the intended changes of outputs and outcomes were met. One way evaluators use logic models is by identifying two main categories of data: (a) planned work (inputs) and (b) intended results (outputs; Finley, 2012; W.K. Kellogg Foundation, 2004). Within these two categories, the components identified were often

tailored to the program being evaluated (Renger, Page, & Renger, 2007). In the planned work category, components included the problem(s), assumptions, resources, and activities; in the intended results category, components included outputs, intermediate/short- and long-term outcomes, and impact (Renger et al., 2007; W.K. Kellogg Foundation, 2004).

In most variations of how logic models were organized and illustrated, the main concept of an if-then relationship existed, whereby each component occurred if the previous component was met. This relationship is shown in Figure 1 and demonstrates that if access to resources is available, then activities may be conducted; if activities are conducted, then intended outputs should be generated; and so on.

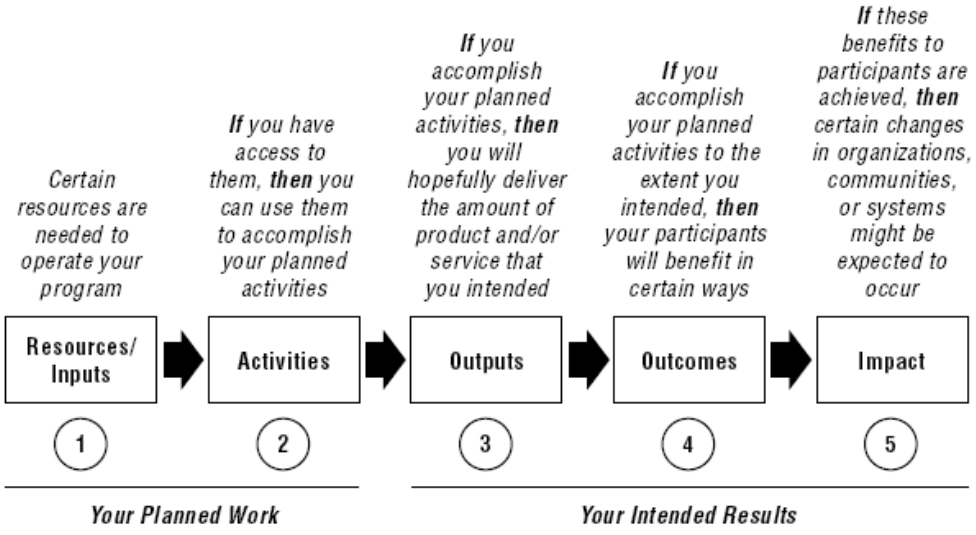


Figure 1. How to read a logic model. This figure illustrates the typical components and flow of a logic model. From "Using logic models to bring together planning, evaluation, and action: Logic model development guide," by the W.K. Kellogg Foundation, 1998, p. 3. Copyright 1998 by the W.K. Kellogg Foundation. Reprinted with permission.

Logic modeling is beneficial due to its plug-and-play characteristic and its ability to identify the underlying assumptions of a program. Some limitations have been identified. Renger et al. (2007) mentioned how linear logic models fail to consider moderating conditions, activities may be created out of tradition and without an underlying purpose, time constraints may lead to circumvention of logic modeling processes, and even experienced evaluators may make errors. Porteous, Sheldrick, and Stewart (2002) explained that while using the logic model, complexity should be avoided; however, oversimplification of the model may lead to a lack of program success (Frye & Hemmer, 2012; Porteous & Montague, 2014; Porteous et al., 2002; Renger et al., 2007). A balance of useful information without burdening the model with details is important.

Overview of Proficiency

Proficiency has been defined several ways, depending on its application. Proficiency was viewed as an expert level ability to complete tasks, a range of abilities (Talebpour et al., 2009), specialized experience in a specific area (Brabender, 2010), growth in a particular area, and a minimum acceptable level of ability (Air Force ISR Agency, 2013b; Neal, 2010). Proficiency has been defined using words such as *skillfulness* (Shi, 2011; Tung & Thomas, 2009) and *competency* (Shi, 2011). In some cases, proficiency was not clearly defined in the context in which it was applied (Culley & Polyakova-Norwood, 2012). Having clear definitions of proficiency are important since vague definitions led to false reporting of actual capability and a lack in credibility of the proficiency concept (Neal, 2010). Although proficiency has been defined

differently in a number of applications, it was generally a concept used to determine at what level individuals were capable of performing specific skills. As with the definition of proficiency, the performance levels (e.g., poor, acceptable, expert) must be clearly defined as well.

Proficiency was used in a variety of fields including education, medicine, sports, multi-linguistics, psychology, and military. Subject matter experts (e.g., curriculum developers, trainers and coaches, and course instructors) in each field typically established their own construct of how proficiency was applied to ensure knowledge and skills were learned. Measurements were then developed and used in defining levels of ability in performing specific tasks as well as methods by which to assess those abilities.

Applications of proficiency. The way proficiency was applied varies between fields and even within a general field (e.g., military applications vary between Air Force, Navy, Marine Corps, etc.). Proficiency has been used as the conceptual framework in the development of an adult learning theory. Proficiency was also seen throughout literature as a differentiation method between basic and expert abilities, a method of knowledge and skill maintenance, and an initial learning measurement tool.

Theoretical application in adult learning. Knox (1980) has articulated his proficiency theory of adult learning on the "unifying concept" of proficiency (p. 378). Learning knowledge, skills, and attitudes both initially and as maintenance or improvement are addressed in the theory (Knox, 1980); these concepts are equally echoed throughout a significant section of additional literature (Alwadani & Morsi, 2012; Deptula & Francisco, 2010; Howerton, Krolak, Manasterski, & Handsfield, 2010; Russell

& Kingsley, 2011; Stillion, 1999). Knox's proficiency theory appeared to be well developed in that several key concepts of continuous adult learning and proficiency as a learning and assessment tool were in place. Knox mentioned the importance of periodic assessments of discrepancies between current and desired proficiency to set objectives and evaluate progress. He also mentioned the significance of meaningful learning for adults: "Interest in enhanced proficiency facilitates persistence in adult learning activities that are satisfying and productive of personal growth" (Knox, 1980, p. 378).

Differentiation between basic and expert ability. Proficiency was observed as a differentiation tool between basic levels of knowledge and skill and growth toward expert ability. This differentiation was seen through Brabender (2010) as she discussed a five-stage model to becoming an expert in group psychotherapy. In this context, proficiency was the stage just before expert ability—stage four—where the psychologist obtained the specialized experience progressing them into expert proficiency (Brabender, 2010).

A method of knowledge and skill maintenance and improvement. Proficiency was found to be used to maintain specific knowledge and skills in performing tasks. This was seen from sports activities (Russell & Kingsley, 2011) to conducting laboratory tests (Howerton et al., 2010). Through their study, Russell and Kingsley (2011) demonstrated the importance of clearly establishing measurements and assessment tools to conduct proficiency analyses and the dividends of using proficiency assessments in maintaining skills. Howerton et al. (2010) revealed similar results through studying proficiency tests of U.S. laboratories' certification maintenance in performing specific analyses; quality

measurements and assessment tools yielded proficiency capacities and suggests increased proficiency as a result of the continued assessments.

The military has been using proficiency assessments for a number of decades (Levy, 2006; Stillion, 1999). Air Force and Navy used proficiency as a method for maintaining piloting skills for the larger purpose of maintaining a combat-ready force (Deptula & Francisco, 2010; Stillion, 1999). One of the programs to maintain pilots' skills was RAP, initiated in 1997 (Headquarters Air Combat Command, 1998). The program was designed to maintain proficiency through periodic (i.e., semiannual or annual) flying of sorties—missions flown which often, or should, contains a sufficient amount of events required for maintaining skills in piloting an aircraft during any variety of situations (Stillion, 1999).

Based on the RAP model, the Air Force developed RIP, which required intelligence personnel to also experience specific mission events (e.g., combat search-and-rescues) within defined periods (Air Force ISR Agency, 2013b). The intent of RIP was to maintain proficiency, as with RAP; however, the periods were more frequent than with the RAP model (Air Force/A2FM, 2008).

An initial learning measure. Proficiency was also used in training programs to establish a minimum knowledge and skill in specific areas. This was seen in the medical field regarding proficiency gain in certain surgeries including argon laser trabeculoplasty (Alwadani & Morsi, 2012) and robotic laparoscopy (Dulan et al., 2012). In these applications, the surgery training often used simulators (virtual reality and manikins) to practice surgical skills to become proficient. In an online graduate nursing course,

proficiency was used to assess knowledge and skill in learning to develop and deliver oral presentations (Culley & Polyakova-Norwood, 2012). Proficiency was also used when attempting to initially assess multilingual competencies (Shi, 2011; Tremblay, 2011). Multilingual analyses are accomplished through a number of language assessment measures, some of which include placement tests, Cloze test, oral interviews, etc. (Tremblay, 2011).

Another way proficiency was used was to assess minimum knowledge within elementary/secondary education, specifically as a result of the No Child Left Behind Act (No Child Left Behind [NCLB], 2002). The NCLB Act has charged states with developing accountability methods to measure students' progress toward proficient reading and math scores (Neal, 2010). However, as a result of an unclear definition of proficiency, several states have made interpretations resulting in students meeting *only* a minimum score in order to be assessed as fully proficient and reported as such (Neal, 2010).

Developing standards

Clear standards must be developed in an attempt to accurately assess knowledge and skills where proficiency is used to assess ability to complete specific skills (Dudley et al., 2002; Glisan, Swender, & Surface, 2013). Standards in measuring proficiency were most appropriately developed through subject matter expert input and curriculum designers (Rouhana, 2012). Standards developed as a measure of proficiency were found in literature as metrics to determine if necessary knowledge and capabilities existed (Deptula & Francisco, 2010; Van Sickle et al., 2010; Walker & Geiss, 2009).

The majority of studies and articles in this literature review have established clear standards by which to measure proficiency along with assessment tools to determine if proficiency was met or maintained. Evidence still showed neglect in specifically defining proficiency or setting clear standards (Neal, 2010). For example, in the case of the NCLB Act, an unclear definition of proficiency has led to differing assessment standards of reading and math progression (Neal, 2010). While some states have set proficiency at meaningful levels, others have established proficiency levels low enough that the majority of students can pass standardized tests—eliminating the worry for failure—allowing schools to report successful annual yearly progress (Neal, 2010).

Another example of a differing definition of proficiency included viewing proficiency as a growth measurement rather than a set level (Neal, 2010). In other words, data showing any growth was interpreted as progress made and proficiency met even though there may not be a meaningful level of knowledge attainment.

Assessing proficiency

In the results of a study of proficiency testing in laboratories, Howerton et al. (2010) suggested that the longer proficiency assessments are accomplished, the better performance will be. Proficiency testing results collected from the 13-year study of hospitals and independent care laboratories that participated in proficiency testing had fewer proficiency testing failures than laboratories that did not participate in proficiency testing (Howerton et al., 2010). Additional research is needed to assess how widespread—how many fields—these results will prove effective. Having a clearly defined concept of proficiency and metric of varying proficiency levels allows for

accurate assessments of proficiency. Assessing proficiency was accomplished in a variety of ways, some of which included objective assessments, surveys or interviews, self-reporting, and simulation data recording or observations.

Objective tests have been used to assess proficiency levels where quantitative data is desired (Howerton et al., 2010; Russell & Kingsley, 2011) and helped the U.S. Coast Guard prove training success (Robbins, 2009). This differs greatly from other methods of assessment such as surveys, interviews, observations, and self-reporting. The latter methods of assessment, particularly self-assessments, had the potential to yield inaccurate results: "Literature is very clear, we are very poor self-assessors" (van der Vleuten et al., 2010, p. 711). One of the reasons this held true was because self-assessments were often overrated. Self-assessments were found to not correlate with similar objective assessments (Dunning, Heath, & Suls, 2004; Lew, Alwis, & Schmidt, 2010).

Accurate assessment methods were important since assessing proficiency played a large role in military preparation for combat. All branches of the military assessed proficiency one way or another (Air Force/A2FM, 2008; Deptula & Francisco, 2010; Kidd, 2012; Robbins, 2009). As proficiency was assessed, it was typically reported to leadership and higher headquarters to relay unit performance and overall readiness status (Dudley et al., 2002; Headquarters Air Combat Command, 1998).

Several sources of data regarding simulators and advancing proficiency levels came from medical fields (Alwadani & Morsi, 2012; D. C. Brown, Miskovic, Tang, & Hanna, 2010; Culley & Polyakova-Norwood, 2012). Simulator assessments offered immediate feedback and correction of errors and enhanced proficiency (Alwadani &

Morsi, 2012). Data regarding simulators and maintaining proficiency existed largely in the military flying community as well (Stillion, 1999; Walker & Geiss, 2009). Flight simulators provided a dense data environment (Walker & Geiss, 2009) that elicited knowledge and skills through a critical decision method of assessment (Klein, Calderwood, & MacGregor, 1989; Militello & Klein, 2013) in which pilots could practice skills necessary for combat environments.

In both fields, medical and military, simulators were used with great success in attaining and maintaining proficiency as part of a competency-based training curriculum. A specific example of this success was seen with the use of a simulator in the formal training unit (FTU) to DCGS, the initial familiarization training of the DCGS weapon system. The FTU simulator operated by providing a realistic training environment for the warfighter entering the DCGS (SRA International, 2013). The simulator injected images of order of battle (OB) such as vehicles, tanks, missile launchers, and ships onto pre-collected imagery for the geospatial analysis warfighters to analyze (SRA International, 2013). Current efforts to develop enhanced, yet cost-effective, simulators within the DCGS community, specifically at individual DGS sites, are on-going (B. Braithwaite, Personal Communication, December 2012).

Implications

Possible project directions include conducting program evaluations on RIP or developing additional training programs to improve proficiency maintenance tools. When conducting program evaluations, although a number of evaluation models exist, the logic model may be most appropriate considering its versatility to be used during any phase of

program implementation. Additional training may be developed to inform best practices of proficiency maintenance and expand the existing program by incorporating stakeholder perceptions of proficiency and RIP.

Summary

The lack of evaluation of RIP prompted this study. Data addressing RIP were limited to local and HHQ-published instructions, while data addressing proficiency was found throughout scholarly literature in a variety of fields. The data collected during this study yielded results valuable to the assessment and management of proficiency via RIP within the DCGS community as it is the first of its kind. This problem was significant since it was unknown how effective RIP training was in maintaining proficiency. The theoretical framework used to inform this study was the logic model due to its ability to be applied at any stage of program implementation and determine a program's success. The literature review provided an overview of proficiency to include varying definitions and applications including constructing an adult learning theory, differentiating basic and expert ability levels, maintaining and improving knowledge and skill, and initially learning knowledge and skills. Developing proficiency standards and assessment methods are both important aspects of using proficiency. Implications in section one identified a program evaluation or additional training program as the potential projects.

In Section 2, I explain the research design and methodology, covering the type of proposed program evaluation, justification and number of participants selected, gaining access to the participants, and measures for ethical protection of the participants. I also explain the limitations and data collection, analysis, and reporting. Section 3 discusses

the project that addresses this problem and includes its goals, rationale, a review of the literature as it relates to the construction of the project and the resulting data that were collected. Additionally, Section 3 includes how the project was implemented and evaluated and the local community and wide-spread implications of social change. Finally, Section 4 covers reflections and conclusions about the project strengths, mitigation of limitations, scholarship, project development and evaluation, and leadership and change. Included is an analysis of self as scholar, practitioner, and project developer. Section 4 ends with a discussion of implications, applications, and direction for future research and an expounded description of the project's potential impact on social change.

Section 2: The Methodology

Section 2 includes an outline of the design including methods of selecting participants, gaining access to the site and participants, and protecting participants from harm . Also in this section, are descriptions of data collection, analysis, and reporting methods, and justifications and limitations of the design. Section 2 ends with a description of the program evaluation results, including data gathering and recording methods, systems used for keeping track of data, evaluation findings, quality assurance measures, and overall outcomes.

Design

An outcome-based program evaluation was used to evaluate RIP and presented to stakeholders at the site in the form of a summative evaluation report (see Appendix A). The proposed evaluation was a case study since it focused on the phenomenon RIP as it occurs naturally (Hancock & Algozzine, 2011) at a DGS site. This design used the logic model to guide the program evaluation and display the relationship between the resources, activities, and outcomes (Crane, 2010; Knowlton & Phillips, 2013).

The outcome-based design was the most appropriate choice since the focus was on whether the program was meeting its intended outcome of proficiency. This is in contrast from other types of program evaluations, such as goal-free evaluations (Youker, Ingraham, & Bayer, 2014) and expertise-oriented evaluations (Blanchard, Torbeck, & Blondeau, 2013). Goal-free evaluations do not necessarily focus on determining whether specific outcomes are met as much on the unknown (Spaulding, 2008). The outcome-based approach places the program evaluator in the primary role of data collection and

analyses, unlike some expertise-oriented evaluations where data may be *presented to* a program evaluator rather than *collected by* the evaluator (Spaulding, 2008). Other qualitative methodologies, such as narrative or phenomenological research, were not appropriate since the first tends to focus on too narrow of a participant sample and the second requires more time with participants than was being offered for this study (Creswell, 2009).

A program evaluation using a case study design was chosen due to the (a) lack of an existing program evaluation and (b) time constraints for conducting this evaluation. Given the research question and purpose of the study, a quantitative approach was not selected. In addition to time constraints (e.g., gaining IRB approval for and pilot-testing surveys), a quantitative study's experimental nature (e.g., conducting research with treatments that influence an outcome) influenced my decision to use a qualitative approach (Creswell, 2009). A qualitative study was most appropriate since this program evaluation focused on the perception of proficiency and how participants interpret the intended outcome of RIP and whether or not it was being met. This method exceeds quantitative methodology as a way of understanding impressions and viewpoints.

A qualitative study is context dependent, whereas a quantitative study is context free (Utley, 2011). Contextual details while conducting interviews and observations may play a vital role in understanding perceptions of proficiency and how RIP effects personnel with varying viewpoints and responsibilities. For example, accounting for environmental factors and differing responsibilities may influence interpretations of proficiency. Qualitative approaches account for multiple crewmember perspectives as

opposed to one reality offered by a quantitative study (Creswell, 2013). By purposefully selecting participants at various levels of RIP and interviewing them using open-ended questions, individual realities likely contributed to a deeper understanding of how RIP effects proficiency.

The performance measures used to determine if the outcome of proficiency is met are predefined in the weapon system training guidance. These measures included working an AF DCGS mission, working during a mission as an instructor, and adhering to general and critical responsibilities. The complete list of performance measures can be found in the AF DCGS training guidance (see Appendix B).

Throughout the data collection and analysis and observing performance tasks, particular attention was given to the critical areas to ensure safety and security issues were resolved if they arose. Existing criteria within the weapon system standardization and evaluation (Stan/Eval) guidance was used to determine the specific critical components (seen in Appendix C) to be observed and to assess if they were breached. An example of these components include emergency/safety procedures such as personnel medical issues or a fire in the building. Although a summative evaluation was conducted, formative reports would have been used where critical safety or security is concerned.

I was the internal evaluator who gathered and analyzed the data. As an internal evaluator, issues of establishing trust with stakeholders, gaining access to data, and knowing the setting and language were avoided (Lodico, Spaulding, & Voegtle, 2010). To assist with ensuring veracity of data analyses, an external evaluator was included in the study. The external evaluator considered was Dr. Thomisha Duru-Nnebue, whose

strengths included understanding qualitative research methodologies and program evaluation using the logic model as the theoretical foundation. The benefit of Dr. Duru-Nnebue as the external evaluator was her disconnectedness from the site and from program being evaluated. Her role allowed her to focus on the project methodology, data, and findings through an objective lens.

Participants

Using purposeful sampling, with a maximal variation strategy, participants were selected from the DGS population of crewmembers. Crewmembers, in the DCGS context, are personnel who are typically qualified in DCGS weapon system position(s) and held to DCGS standards; they conduct ISR missions and manage the unit's RIP program. Purposeful sampling helps to understand a central phenomenon and gather information-rich feedback from selected participants (Creswell, 2012). The maximum variation strategy allows researchers to gather multiple perspectives that are known to be different from one participant to the next (Lodico et al., 2010; Suri, 2011). As such, participants selected for the study were qualified in the weapon system (e.g., holding at least one crew position, such as, geospatial analyst, technical reporter, imagery mission supervisor, etc.) and held varying levels of responsibility. The multiple perspectives these members provided were used to support common themes (Chen, Ibekwe-SanJuan, & Hou, 2010) that arose from analyzing the data. Three qualified crewmembers were selected; one was current and actively sitting mission (e.g., assigned to an active duty Air Force flight), one was current and not actively sitting mission (e.g., working in an office maintaining unit programs), and one was noncurrent (e.g., holding an unexpired weapon

system qualification but having lapsed the currency requirement). An additional two participants, an instructor and RIP training manager, were selected to add alternate, non-crewmember perspectives of the perception of proficiency within the DGS.

The number of participants chosen for this evaluation totaled five (all qualified in the weapon system, three working missions and two responsible for managing RIP). All individuals stood to have unique perspectives of proficiency and RIP and contributed valuable information toward the evaluation results. The number of participants chosen was not excessive as to provide an in-depth picture of the program; additional participants were not selected since each individual added would add a proportional amount of time to the data collection and analysis (Creswell, 2012).

Procedures for gaining access to the site included approval by institutional review board(s), commanders, participants, and other local key personnel (Creswell, 2012). The Air Force Institutional Review Board was the first entity to grant permission (see Appendix D). Walden University IRB was the next approval authority (approval number 04-11-14-0247430). The facility commander and the special security officer were the initial grantors of permission to conduct the evaluation at the facility and with their personnel. A meeting was scheduled with the commander's representatives where I briefed them on the purpose and methodology of the study. Approval was in the form of memorandums for record (see Appendix E) authored by me and endorsed by the facility commander and chief of standardizations and evaluation granting permission. Finally, I sought access to the participants by seeking their permission to involve them in the evaluation. They were searched for through the data automation system, Patriot Excalibur

(PEX), and subsequently contacted via e-mail (see Appendix F) to request a meeting where I asked them to participate in the study and presented them with the procedures of the study.

As the internal evaluator, individuals at the site were familiar with my presence and felt less threatened and more likely to participate in the evaluation (Spaulding, 2008). No participant was under this my direct supervision. Prospective participants who fell under my management were non-selected and substituted with participants of equivalent selection criteria and experience from another squadron or chain of command. To gain participant permission, and further, begin establishing the researcher-participant working relationship, a meeting was scheduled to explain the program evaluation procedures and describe interviewer/interviewee and observer/observed relationships. To avoid negative effects on participants and the organization, measures for ethical protection of participants and the organization location were taken.

Anonymity and confidentiality were first and foremost in ensuring no harm of the participants (Hancock & Algozzine, 2011). Names of the participants and those observed were withheld and assigned simple code names (e.g., P1, P2, etc.). To ensure confidentiality, only I will knew the real identities of the participants, interviews were coordinated discretely and held off-site in the participants' downtime (e.g., lunch break), and I blended in with the workplace during observations as to not call attention to any one participant. All data regarding participants were close-guarded during collection and transcribed to digital storage on the same day. After transcription, hardcopy data were destroyed or deidentified for use as samples in this study; digital data were stored on an

Advanced Encryption Standard (AES), 256-bit, password-protected, solid-state, removable storage drive to which only I have access.

Data Collection

A case study methodology was used to gather qualitative data. Data collection included document reviews (training materials, trackers, reports, training records); semi-structured, audio-recorded interviews regarding perception of RIP processes and effect on proficiency; and observations of RIP task completion and program processes.

Reviewing training materials, trackers, reports, and training records objectively revealed how RIP is being maintained and how well proficiency is tracked by personnel. These documents acted as physical evidence, linking what is being researched (perceptions of proficiency) with data maintained for record (Hancock & Algozzine, 2011). Training materials and training records were needed to objectively substantiate what materials and methods were used for training and how training is accomplished. Trackers and reports show who is reportedly accomplishing RIP training and at what periodicity. Data from these documents were transcribed and grouped with respective participants, as appropriate, with personally identifiable information removed (real names, social security numbers, etc.). Additionally, sensitive or classified data were not be included with the documents collected for review or published in any form. To collect and protect these documents after they have been redacted of classified and personally identifiable information, they were stored on the same removable storage drive on which participant information were stored.

Interviews were semi-structured with specific predetermined and open-ended questions (see Appendix G). Open-ended questions allowed for some flexibility in the participants' responses and probing questions were used to better understand participants' meanings and perceptions. Probing questions included silence, sounds, a single word, or complete sentences (Glesne, 2011). For example, I probed responses by saying, "What else?" "Tell me more." or "I want to make sure I understand what you mean," and repeated what the participant said (Glesne, 2011). An interview guide, or protocol (see Appendix G), was used to annotate which questions to ask all of the participants. Five one-on-one interviews were conducted and were planned to last 45 minutes each. No participant proceeded past the 45-minute timeframe. The primary location for interviews was a base education center classroom located away from the primary duty center to assist with maintaining confidentiality. Should the primary location have become inaccessible, the secondary location was a meeting room at the base library. The interviews were coordinated with the participants and scheduled during times where they were not required for critical missions (e.g., not scheduled for mission or during known extended breaks). Participant coordination and the space for the interviews was reserved 2 weeks in advance. With permission from the participant, the interviews were audio-recorded to allow for subsequent review and transcription. The recordings (audio and transcriptions) were also securely stored storage drive on which transcriptions and documents were stored.

Three observations were conducted to gather more objective data regarding the processes of RIP (Hancock & Algozzine, 2011; Kawulich, 2005). One observation was

conducted during a live mission on the operations floor, one in a back shop to observe nonmission RIP procedures, and one to observe the management of RIP itself. An observation protocol (see Appendix H) was used to include when and where the observation will take place, the participants being observed, and what activities or events were being observed (Hancock & Algozzine, 2011).

Data Analysis

Data analyses were conducted using a triangulation of data (document reviews, interviews, and observations) to validate findings (Lodico et al., 2010). Document reviews containing historical currency tracking, training events, official policies, and procedures were triangulated with observations and interview results to build a more complete story of how proficiency is perceived because of RIP. The goal of triangulating these three data sources was to substantiate feelings and interpretations with historical, documented data (Casey & Murphy, 2009). Data were analyzed during collection (initial coding), immediately following collection (recapping/recollection of interviews), and post collection (development of themes and linking data between collection types and literature). NVivo 10 was integral in the data analysis process by assisting with preparing and organizing the data, reviewing and exploring the data, coding the data into categories, and constructing descriptions of people, places, and activities (Lodico et al., 2010). Once transcripts, observation notes, and documents were stored in NVivo 10, the application has advance query tools that helped to identify and link codes and themes between sources. However, NVivo is not fully automated; I reviewed all sources of data to verify themes were accurate and not missed. While NVivo 10 includes robust querying

capabilities to find not only exact words but similar words and phrases, I still needed to provide the meaning behind the results.

Further validation of the data included member checking and external evaluator analysis. Member checking occurred by allowing participants in the study to review transcriptions and initial interpretations (Creswell, 2012). An e-mail was sent to participants requesting their review of their interviews after transcription and preliminary analysis of all the interviews was complete. To maintain security of the documents, participants were be able to review the data during a one-on-one meeting at the same location the interview took place (either the base education center or base library). An external evaluator analyzed the results, offering a different perspective and contributed toward the truthfulness of the evaluation. Any inconsistent data, or discrepant cases, were noted as they were observed. Evidence of the discrepant information is discussed and compared with existing themes to further determine and strengthen validity (Creswell, 2009; Morrow, 2005).

Reporting

A summative report was the primary method for reporting the results. The summative report was the completed project and was accompanied via PowerPoint presentation delivered to stakeholders at the DGS location. As mentioned previously, formative reports were planned be provided if breaches in critical areas occurred. Formative reports would have taken the form of memorandums for record (MFRs), e-mails, one-on-one meetings, and ad hoc briefings with stakeholders, as requested.

Limitations

Caution is needed when reading the term, *logic model*, since logic is not necessarily guaranteed (Knowlton & Phillips, 2013). That is, despite that there are some who see a printed model and automatically assume it to be true, a logic model is simply a graphical representation of a program and not confirmation of its success (Knowlton & Phillips, 2013). The logic model shows the connection of inputs and outputs (Renger, Bartel, & Foltysova, 2013) through a graphical snapshot of the program (Naimoli, Frymus, Franco, & Newsome, 2014). A "snapshot" is a limitation of linear logic models that do not take into consideration the dynamic nature of programs and may not capture internal processes that evolve between developments of models. Therefore, logic models must be revised through re-evaluations including feedback from program stakeholders (Knowlton & Phillips, 2013; Taut, Santelices, Araya, & Manzi, 2010).

Despite the benefits of an internal evaluator conducting the program evaluation (Spaulding, 2008), potential bias for, or against, the location, participants, program, and so on, may exist while collecting and analyzing data and reporting findings. Implicit biases are likely to exist with any evaluator (internal or external) making true objectivity a challenge.

Within qualitative research, sample size is an issue of debate and whether to choose a small or large purposeful sample often resides with the researcher (Creswell, 2012). The sample size and number of interviews and observations for this evaluation was small and may have led to missing information vital toward the understanding of proficiency at this DGS. The participants selected were from one site out of six world-

wide sites. It is important to note that the results of this evaluation are not reflective of the entire DCGS population as these results are not generalizable.

Program Evaluation Results

Information provided during data collection supported the development of the logic model (see Appendix I) formed to graphically depict the inputs, outputs, and outcomes of RIP. It shows the resources provided for the program to function, the activities conducted, participation required, and the overall outcomes to be met. Additionally, the logic model suggested assumptions of the inputs and activities as well as external factors contributing to crewmember proficiency. This section covers the data gathering and recording procedures, systems used for keeping track of the data, evaluation findings, quality assurance measures, and a summary of the outcomes.

Data Gathering and Recording

Data for this program evaluation were gathered from interviews, observations, and document reviews. Interviews of five participants provided individual perspectives of proficiency and RIP. Interviews were semi-structured and conducted using an interview protocol. They were audio recorded with permission and transcribed into NVivo for coding. Observations of three participants (P1, P2, P5) provided data showing activities related to RIP and supported interview findings from all interviews. Observations were recorded via observation notes (see Appendix J) using the observation protocol for this evaluation. Document reviews (training records, RIP reports, training materials, and PEX) revealed tangible data contributing to the understanding of how RIP functions and its effectiveness. Document data were gathered by accessing file systems and reviewing

data associated with interview participants, program requirements, and training requirements and were recorded via document and field notes. The triangulation of these data validates findings from each of the data collection methods and increases the overall credibility of the evaluation.

Systems Used for Keeping Track of Data

Data were grouped by participant and names were not written down to ensure their confidentiality. Audio recordings were digital and each folder on the recording device storing participant interviews was labeled A through E. Audio for the interview with Participant 1 (P1) was stored in folder A of the recording device, Participant 2 (P2) in folder B, and so on. Those files were moved to a 256-bit encrypted drive and deleted from the recording device to ensure their security. Notes from the interviews were hand-written and transcribed into NVivo. Transcriptions of the interviews and observations were simply labeled P1, P2, and so on. After data were transcribed into NVivo, codes were assigned to individual ideas or topics for each of the data types (interview, observation, and document review) which revealed developing themes. No other programs, cataloging systems, or logs were used to track data and emerging understandings.

Findings

The program evaluation results of RIP are presented as four overarching themes derived from the data coding. The themes include a lack of knowledge and understanding of RIP, perceptions of how RIP helps to maintain proficiency, how RIP applies to current missions and qualifications, and the condition of RIP management.

Finding 1: Knowledge of and adherence to RIP. A theme common among all participant interview responses showed a lack of knowledge of at least some of the RIP processes by each participant. In addition to the processes, the purpose of RIP was commonly unknown among the participants. Furthermore, it was evident that the processes and purpose were generally unknown among non-participants as well considering anecdotal evidence provided by the participants.

RIP processes. The processes that were not known or not being adhered to included assigning RIP tasks upon evaluation completion; locating simulation training materials, conducting simulation training, and proper documentation of RIP training in training records by an instructor; reporting RIP task completion; and the method of auditing RIP task reporting to ensure compliance.

During initial qualification or mission qualification training, RIP is required to be taught to analysts prior to being expected to comply with reporting requirements as a component of the one of the critical areas covering Go/No-Go (Operations Support Training, 2012). Upon completion of the qualification evaluation whereby evaluators award crewmembers a weapon system qualification, the training office should assign RIP tasks immediately. This task has not been consistently accomplished, as explained by P5, a RIP program manager:

> For the RIP, the only thing that I run into personally is that I run into a lot of people that have no idea that they have to do RIP tasks because [training] never loads them in. So that's a flaw right there. I've ran into multiple people who

> haven't done them in months, they just never got loaded in, yet they still have a qual. So, there's again a broken piece.

For tasks that are assigned, the process of assigning it correctly (e.g., including a due date while assigning RIP tasks enforcing currency requirements) is occasionally not being followed, causing people to remain "green" (ready, current, or sufficiently proficient to sit live missions) for their qualification when in reality, they have never before reported RIP task completion. This gap in process suggests that there is any number of crewmembers not currently proficient at performing some or all of their positional responsibilities.

RIP task training (knowledge, simulation, and documentation) is an important component of the program since it is the method crewmembers will likely experience tasks frequently enough to remain proficient to complete their unit's tasked mission(s). One issue identified is the inability to locate the training materials. Participants 1 and 2 were unable to demonstrate how to retrieve the knowledge/simulation training slides because they were unaware of their location. P3 explained that "depending on your unit, they're in the training folder, locally.... I think I found them in both [training and Stan/Eval] folders before. Yeah, or your local training folder would hold all the PowerPoints." In fact, the training materials can be found in two locations, locally or on the HHQ SharePoint site (both on SIPRNet). P5, the RIP program manager, was the only participant observed to retrieve the RIP task training materials that were from the HHQ SharePoint site and not the local training materials. However, both training material locations had outdated training.

With regard to conducting training, P4, a qualified instructor, did not specifically train RIP tasks that needed to be covered. P4 stated:

> I don't sit over their shoulder and make sure that they do them because, if you are [a] qualified member, you understand what you have to do and your qualification is your own responsibility. But, what I do hold them responsible for... [is] reviewing your checklists and stuff and making sure you understand what to do.

In addition to not specifically training the knowledge portion of RIP tasks, some instructors did not conduct scenario training with crewmembers. P4 continued:

> There are no scenarios. No, I don't give them anything because again they're just sitting [to regain currency], they've got their qualification, they're just not current, so they have to sit with an instructor to become current. So, I put my name next to them as their [instructor] and then let them regain their currency.

After training has concluded, the instruction made no entry in the crewmembers' training records (AF Form 623a or PEX Memorandum for Record) documenting that training was conducted to adjust the member from N-BMC/CMR to BMC/CMR. In discussing documentation of training, P4 identified that she has never completed documentation (AF Form 623a or PEX Memorandum for Record) before and that her "understanding is that we don't do that as much now."

Reporting completion of RIP tasks (live or simulated) occurs by submitting a Training Activity Report (TAR) within PEX. The intent of the TAR is to report which tasks were completed after they were experienced, however, members often report RIP

tasks as a summary of what has been accomplished within the last one, two, or three months vs. immediately following completion of task(s). P1 explained:

> I only [report tasks] once a month, or once every other month, or something so I guess I would just summarize what happened for those last two months. But I guess theoretically you would probably do it right after, but I think most people probably just summarize what happened in the last two months.

P2 explained, during his demonstration of reporting RIP tasks, that crewmembers should report tasks as they are accomplished or at least every 90 days, but admitted to typically only reporting tasks in preparation for sitting mission. The RIP program manager pointed out that:

> They're not actively tracking accomplishment of these events, it's not a forethought for them. It's, "uh, my 90 days are up, I'm [going to] show as noncurrent, so I need to report all of these. I know within the last 90 days... I did all of this" rather than as soon as the event happens, signing off on it.

After the TAR is submitted it is then audited by a crewmember with auditing permissions as a form of validation that the member legitimately completed the task or training. The participants have raised an issue of integrity concerning both crewmembers and auditors. Crewmembers were described as reporting tasks whether they have completed them or not and auditors have been said to approve TARs in bulk without having confirmed if tasks were actually completed by crewmembers. This calls into question the accountability of crewmembers, auditors, and the program outcome of proficiency as a whole. These processes are essential to the foundation of RIP as they are

the methods to ensure currency and proficiency are maintained by crewmembers holding qualifications.

A requirement of the program is a RIP status report showing currency status of crewmembers (i.e., if crewmembers are current, coming due to complete RIP tasks, or have not completed RIP tasks within the required periodicity) (Air Force ISR Agency, 2013b). The program manager explained that he generates the report and placed it in a public location (the Go/No-Go binder) for all members to review as needed. However, no RIP report was found, placed in the location described, or provided to the unit commanders as required.

Purpose of RIP. Participants interviewed were mixed in their understanding of the purpose of RIP. While some viewed the purpose of RIP as a method of maintaining the eligibility, a checkbox among a list of additional requirements, to work live missions as oppose to a method of maintaining proficiency of working live missions, others did not understand its purpose at all. Those who had some idea of its purpose did not see it as a component of continuation training to prevent lapses in proficiency but more of a contingency plan in the event you do not experience tasks and need to be brought back into currency to work live missions.

Finding 2: Perception of proficiency. Individual perceptions of proficiency concerning RIP vary between the five participants. I observed perceptions to be both positive and negative. The positive perceptions of RIP include its utility of reminding crewmembers of their responsibility to maintain currency and the way RIP assists with keeping crewmembers updated on critical items checklists. The negative perceptions of

proficiency concerning RIP were that the program only covered critical items and not the entirety of the qualifications. RIP was seen as a mere "checkbox" needing to be signed off so crewmembers may work missions, it was not viewed as effective, and there was a lack of integrity of crewmembers reporting completion of the task training and simulation.

Positive perceptions. RIP reminded crewmembers of their responsibility of currency via the PEX application through automated notifications. RIP tasks were loaded into PEX and the periodicity was set to remind crewmembers to accomplish specific tasks when approaching or passing their expiration dates. Participants have identified this as one of the more helpful aspects of the program. Another helpful aspect of RIP was that it covers critical tasks important to successful mission accomplishment and ensured the safety of warfighters downrange; crewmembers were prompted to review critical items checklists when they complete RIP tasks. The way the program was used was described as both helpful in maintaining proficiency, and yet not enough to maintain proficiency, since the training was only a reminder of where checklists were located.

Negative Perceptions. RIP was not viewed as a proficiency program as much as it was a requirement permitting crewmembers to work live missions (i.e., it is a checkbox item among a list of requirements showing crewmembers as available for mission in PEX). P5 stated, "not viewed as tasks that are being trained to individuals, it's viewed as events that should've happened. People aren't as proactive with things like this because they're focused on the mission itself."

The consensus among the participants interviewed and observed was that RIP not effective at maintaining proficiency. Phrases used to describe its level of effectiveness were “irrelevant in its current form,” “marginally effective,” “does not help with proficiency,” a “waste of time and completely ineffective,” and “a good system with a lot of holes.” This was not to say RIP does not contribute toward proficiency in some way; RIP acted as a catalyst by reminding crewmembers to work missions and provided checklists for critical items.

Participants question the integrity of crewmembers reporting completion of the RIP task training and simulation. Some members reported tasks even if they have not experienced them, either live or simulated.

P5 stated:

> They need to report it and they need to get it signed off. You may have an IMS that can sign off on these rip tasks who hasn’t been working with this flight over the last two months but to make their person current, will sign off on them trusting that the individual had done it. When in reality, I’d say most people that report their rip tasks every 90 days, couldn’t tell you exactly when they did specific events.

While I was working at his desk, a crewmember was overheard asking about RIP tasks and “getting signed off on them so [he] can sit mission.” Three of the four present Unit Training Managers told the crewmember they did not know what RIP tasks were or how to sign off on them.

Finding 3: Application of RIP. Participants perceived the program to cover critical items and not the entirety of the mission position qualifications. The reality was that RIP adequately covered key positional responsibilities beyond that of critical areas. These areas were categorized into mission, mission operations, special emphasis events, and emergency/contingency actions. The error in perception lies in the application of RIP and how the training was built and delivered (i.e., building expectations, adequate examples of mission events including audio, video, and communication recording and playback capability, and effective simulation exercises). The method of merely reviewing checklists and reporting RIP tasks as a result of that review was not effective. Training developers needed to delineate the RIP tasks beyond their current positional associations. In other words, the signals intelligence (SIGINT), imagery intelligence (IMINT), and multiple intelligence (Multi-INT) reporting task would be better applied to positional training if specific metrics were developed for each area of focus (e.g., outlining different reports and standards by which to assess each report according to intelligence type).

Although RIP tasks covered the general areas of all DCGS positions, after crewmember received their qualification, some were divided into different, more specialized areas of focus based on particular mission sets (e.g., geospatial analysts were often split into MA or HA teams after receiving their general geospatial analysis qualification). Individuals who focused on one particular mission set often time needed to relearn other aspects of their qualifications for maintaining that qualification (i.e., passing their periodic evaluations, a 17-month recurrent evaluation of total positional qualification). RIP did not assist with maintaining the entirety of the qualification

because tasks were not designed to cover specific MA or HA tasks but were left broad enough to be interpreted however they best apply locally. This was seen clearly with FMV-specific analysts who worked MA missions and completed RIP tasks for those missions. When their periodic evaluation period arrived they were removed from MA and placed on HA missions to relearn what knowledge and skills were lost in order to pass their evaluations. RIP did not maintain analysts' abilities through the activities observed.

Finding 4: Conditions of RIP management. Simulated training resources were not current or effective, potentially causing an absence of engagement and diminished perception of purposefulness of RIP. The existing local RIP training materials were developed in July 2011 and only the mission operation commander (MOC) training was substantially updated. While reviewing file property metadata, it was observed that from July 2011 to May 2014, the duration that RIP training materials were accessed at this site averaged 28 hours. Considering there are over 1,000 qualified crewmembers at the site and certain tasks occurred at a rate fewer than would allow them to be experienced live, the duration of access would be longer if the materials were used properly. For example, over 1,000 crewmembers would not have worked the 110 Combat Search-and-Rescue missions that occurred DCGS-wide between July 2011 and May 2014. Therefore, if properly used, the number of hours the training materials were accessed would be greater than 28, assuming:

- crewmembers are aware of RIP requirements and know the location of the official training materials;

- crewmembers accessed each knowledge and simulation training task for more than two minutes;
- out of the 1,035 days between July 2011 and May 2014, 11 90-day segments existed, suggesting that at least one task would be trained/simulated approximately 10 times;
- no other training materials were used, including duplicate copies stored in alternate file locations; and
- "hours of file access" included both editing and viewing time (see Appendix K).

In addition to being minimally used, the effectiveness of the training materials was called to question considering most of the training consisted of a mere suggestion to review checklists and verbally answer a one-question scenario.

The only training material observed to be current and accessed the appropriate number of hours since its creation is the MOC PowerPoint training at a total of 131 hours since its creation. The MOC training material was the only one to have been expanded with relevant content, however, no scenarios or simulations were included, which would be likely to enhance its effectiveness.

After RIP tasks have been experienced, either as live events or trained via shadowing missions, academic review, or simulations, a TAR was required to report task completion and be audited to ensure validity. The auditing of TARs lacks credibility since crewmembers with auditing permissions are known to approve individuals without confirming if tasks were actually experienced. Therefore, authoritative oversight to enforce individual integrity appeared to be missing. Furthermore, these unconfirmed

approvals occurred as a “blanket audit” where multiple TARs were approved simultaneously. While there were auditors, whose integrity prevents them from falsely approving TARs, there existed the possibility that false reporting occurs nonetheless. This false reporting suggested a lack of oversight of the auditing process and lack of integrity among crewmembers. These auditing practices may be a result of a lack of understanding of the purpose of RIP or reason for the TAR/audit processes.

Management of RIP by one person, as an ancillary duty may have been too much to handle. With over 1,400 qualified crewmembers at this site spread across multiple squadrons, tracking individual completion and reporting of RIP tasks was challenging. From an authoritative perspective, the RIP program manager required the positional, or delegated, authority to enforce RIP training and auditing procedures of members outside of his or her own squadron. Unit-specific RIP managers may help with overall management (i.e., tracking task completion or proper auditing of TARs).

There are two RIP management items that were also discussed in the knowledge of and adherence to RIP section. These items included RIP task assignment and the unit commander RIP status report. These issues were covered under both finding categories considering there was a lack of knowledge of and adherence to the tasks and both tasks are a part of RIP management.

Quality Assurance

Three methods were used to ensure evidence of quality of the evaluation findings including member checking of interview transcriptions and initial interpretations; triangulation of interviews, observations, and document reviews; and external evaluator

review of the evaluation proposal, deidentified data, and results. Interview transcriptions with notes showing initial coding and interpretations were sent to participants (see Appendix L) for review and confirmation of accuracy. This process of member-checking strengthens my collected data for correctness and analyses for accuracy (Creswell, 2012). All five participants confirmed that transcriptions and analyses were correct and offered no corrections. Two types of triangulation, methodological and data, were used to validate or refute findings of data collected. Denzin (1978) proposed four types of triangulation including methodological, data, investigator, and theoretical (as cited in Hussein, 2009). Using more than one type of triangulation is presumed to further increase validity by cross-checking perceptions of program attributes between participants as well as data types. A triangulation of the interviews, observations, and document reviews validated emergent codes and themes (see Appendix M). Following the development of the findings of this evaluation, the evaluation methods, de-identified/raw data, transcriptions, and findings were provided to an external evaluator for review. The external evaluator provides an alternate perspective to the program evaluation without implicit biases gained from working closely with the program and participants being evaluated (Spaulding, 2008). After reviewing the program evaluation materials, data, and findings, Dr. Duru-Nneubu provided a brief summary report (see Appendix N) corroborating analyses, strengths, and weaknesses.

Outcomes

A program evaluation was needed to determine to what extent RIP was meeting its intended outcome of proficiency. The guiding research question for this evaluation

asked how is proficiency perceived by DCGS crewmembers at a military installation with ISR missions concerning RIP. The perception of proficiency appears to be minimally effected by RIP considering there is a lack of knowledge and understanding of the program processes and its purpose. As a result of this lack of knowledge and understanding of the program, it is not used to its fullest potential or managed appropriately to maintain proficiency of crewmembers abilities.

Conclusion

Section 2 explained the methodology chosen for this project study. The design chosen was an outcome-based program evaluation using document analysis, interviews, and observations as data collection methods. I selected participants using purposeful sampling with a maximal variation strategy. Procedures for gaining access to the site were discussed as were methods for the ethical protection of participants. Data analysis was conducted using NVivo 10 qualitative analysis software to assist with recognizing and assigning codes and themes. Limitations were discussed, to include interpretation of the term Logic Model, use of internal evaluators, and small sample sizes. The evaluation results were reported and covered data gathering and recording procedures, systems used for keeping track of data, findings, quality assurance methods, and evaluation outcomes.

The completed project is described in further detail in Section 3.

Section 3: The Project

Introduction

The project for this doctoral study was a summative evaluation report (see Appendix A). A description of the project, its goals, and rationale are provided in this section. A review of the literature that supports the theoretical foundation of the project and the resulting data is discussed. How the study was implemented, plans for future evaluations, and implications for social change are also covered.

Description and Goals

The program evaluation conducted on RIP resulted in a summative report as the project from this study. The guiding question asked how proficiency is perceived by DCGS crewmembers because of RIP at a military installation with ISR missions. The goal of this project was to deliver a program evaluation report where none was previously provided to show if RIP outcomes are being met.

Rationale

A program evaluation has never been conducted on RIP since its implementation in 2010. I chose this project to provide a status update of the current program and as an effort to mitigate the potential negative impact of relying on a proficiency maintenance program without knowing if the intended outcome was being met. This project genre, a qualitative program evaluation report with logic modeling as its theoretical evaluation, was chosen because it enabled evaluation of perceptions while organizing a graphic depiction of the program in its current state. Logic modeling has been successfully used in a variety of evaluations (Gargani, 2013).

The problem of a lack of program evaluation was addressed by the project because the project itself is a program evaluation report. This project served as a solution to the problem by providing stakeholders with findings in the form of a summative report constructed from varying viewpoints of how proficiency was perceived based on individuals' interview responses and observations. To gain a broad understanding of perceptions, participants were selected using purposeful sampling with maximal variation of participants with different job requirements and involvement with RIP, used to ensure a diversity of participants while maintaining relevance to the research question (Creswell, 2012). This evaluation fit with the analysis completed in Section 2 because data from interviews, observations, and document reviews were coded and emergent themes were identified and triangulated between participants and sources. The themes that were developed contributed to understanding the perception of proficiency because of RIP.

Review of the Literature

The purpose of this review was to establish the importance of (a) the central phenomenon of perception of proficiency and (b) logic modeling as an evaluation method; it was less focused on justifying the need for research and questions for the study (Creswell, 2012). Science Direct, ProQuest Central, and Academic Search Complete were the databases used to identify scholarly articles on this topic. The following keywords, with Boolean operators, were used: to narrow search results and included *logic model* and *program evaluation, outcome-based* and *logic model, logic model management tool,* and *logic model* and *program awareness*.

This project was informed by this review and included research and theories on logic modeling as well as program evaluations that have used logic modeling. Literature retrieved provided practical applications of logic models and assisted in forming the framework of the project. Additional research focusing on the ideas and uses of proficiency throughout various career fields was used to develop a broad understanding of perception of proficiency and how it is generally applied (i.e., in fields outside of the program and site being evaluated). I was able to show perception of proficiency pertaining to RIP as well as explain what components of the program exist and are being implemented effectively. The findings were yielded because careful consideration was given to the criteria on which this study was based. This review explains why the program evaluation genre was selected, the theories that contributed toward building the project, and the data yielded from the project with consideration given to previous research and theories about program evaluation.

Selecting the Program Evaluation Type and Constructing the Project

The genre of this project is a program evaluation report using logic modeling. The literature reviewed supports this genre as a suitable approach to evaluating the proficiency maintenance program at this site considering it offers evaluators a method of gathering data of the program inputs, outputs, and outcomes and linking activities to outcomes (Bellini, Henry, & Pratt, 2011; Hayes, Parchman, & Howard, 2011; Knowlton & Phillips, 2013; W.K. Kellogg Foundation, 2004). Since a program evaluation had never been conducted on RIP, this genre was appropriately selected as the solution. The criteria used to develop the project included selecting a theoretical framework consistent

with evaluating a program after its initiation (Knowlton & Phillips, 2013) and qualitative methodologies used to understand and report perceptions (Creswell, 2012) of participants who play specific roles in the program being evaluated (Creswell, 2012). Evaluating the program using a logic model allowed a graphic depiction to be generated (Knowlton & Phillips, 2013) of the program components that was used to inform stakeholders of the current, interconnected aspects of the program.

While an abundant amount of research was not found regarding this specific proficiency topic, there were relevant research articles and theories pertaining to logic modeling and proficiency that were used to construct the content of this project. The following articles were useful regarding the use of logic models in program evaluations and connecting activities to outcomes that provided insights toward the successful evaluation of this program. First, was a doctoral study that was an evaluation of a community college workforce development program (Duru-Nnebue, 2012) that used a similar methodology and theoretical foundation. Second, was an assessment of a logic model approach to achieving a particular outcome (C. A. Brown, 2012) which showed the importance of the logic model in planning program components. Third, was a case study that used client exit interviews to understand outcomes of a program and further develop the outcomes section of an existing logic model (Unrau, 2001). Finally, was an examination of the process and impact of undergraduate teacher education programs using the logic model approach (Newton, Poon, Nunes, & Stone, 2013) showed how links between program components can be formed, provided a concept for improving

logic model development and program understanding, and substantiates evaluation research as a viable method to improve societal conditions.

This project was guided using a qualitative methodology to collect data regarding perceptions of proficiency pertaining to RIP and report the descriptive findings to stakeholders. Interview transcripts, observation notes, and document review notes contained the primary data analyzed (Brousselle & Champagne, 2011). The interviews were semi-structured with a set of six questions that were asked of all participants involved to maintain accuracy and benefit the study (Vijulie, Manea, Matei, Tirla, & Trinca, 2013). Interview and observation protocols were used to standardize interactions between the evaluator and participants and were included in the final project. The logic model constructed for this project is a linear outcome-based model, read from left to right, with assumptions and external factors identified below the program inputs, outputs, and outcomes. This is merely one of the logic model designs as there are several to choose from depending on the program being evaluated (Anderson et al., 2011; Blanchard et al., 2013; Channon, Marsh, Jenkins, & Robling, 2013; Das, Petruzzello, & Ryan, 2014; Monroe & Horm, 2012). Other logic model designs include theory-based, activities-based, and research-based (W.K. Kellogg Foundation, 2004). Data used to construct the logic model were collected from participants as stakeholders in the intelligence community running RIP (Sridharan & Nakaima, 2011). By including these participants in the construction of the logic model, its relevance is enhanced among the stakeholders (Afifi, Makhoul, Hajj, & Nakkash, 2011; Funnell & Rogers, 2011).

Data Yielded from the Project

The logic model developed from this study suggests that if program participants complete the necessary activities, then the outcome will be met and they will remain proficient in their duties. The idea that activities will lead to outcomes is consistent with logic modeling applications (Chiappelli & Cajulis, 2009; Hill & Thies, 2010; Newton et al., 2013; Unrau, 2001), however, it is important to understand how these links are made. While the logic model suggests that experiencing tasks maintains or improves proficiency, there is no indication to how or if the training is adequate or if proficiency is actually improved. It is a known problem that logic models can show relationships of variables without explaining how or why (Funnell & Rogers, 2011). To solve this problem of determining how or why, qualitative data were collected to understand crewmember perceptions that explain the program further. Finding one showed that the program and/or its purpose appear to be largely unknown. This finding reinforces the idea that exposure of and adherence to the program are important areas to evaluate (Ryan & Smith, 2009). Finding two showed those who are aware of the program and its purpose believe the activities to be beneficial to the outcome of maintaining proficiency, at least in some form. The activities are not believed to be the sole method for maintaining proficiency but that they do assist crewmembers with reminding them to review critical checklists and maintaining, at least, currency in their mission positions.

The logic model also suggests that the program is intended to maintain proficiency for all mission positions and types (e.g., a geospatial analyst working both high altitude and medium altitude mission types). However, finding three revealed that

some RIP tasks are inadequate for maintaining proficiency across the broad range of mission types. This can be attributed to a lack of quality RIP training suited for a variety of circumstances and may be mitigated through proper program management. Aspects of program management can be accurately revealed through logic modeling (Fielden et al., 2007). Stakeholders want to know the status of a program and if it is succeeding (Barclay et al., 2014) and proper program management may be a determining factor for if a program is allowed to continue or if it is reformed (Keene & Pullin, 2011; McLaughlin & Jordan, 1999; Schmidle, 2012). Finding four demonstrates several program management issues limiting the overall success of the program. Training materials were found to be outdated and not used by participants and other crewmembers at the site. An integrity or authoritative oversight issue has led to false reporting of training items and has implications for a lack of reliability in the outcome of RIP.

Implementation

The resources that needed to be developed for this project included the following: interview facilities, computer access, personnel as participants, and an external evaluator. No extraordinary financial resources were required for this project—the evaluation was a commander-directed supplemental evaluation under the Stan/Eval office. I was identified as the primary evaluator and the project was a summative report of the findings. This allowed the project to be developed during normal work hours and personal/off-duty time eliminating the needs for program evaluator or other personnel fees or incentives.

I initiated this project under the authority of the site commander in accordance with the methods described in Section 2 of this study. The timeline for the project,

specifically, data collection and analysis, was approximately three months. At the conclusion of analyzing the data to determine themes, I delivered the final project to the site commander and staff via the Standardization and Evaluations Board (SEB) within three months.

There were three roles during this program evaluation including the program evaluator; the interview and the observation participant; and the external evaluator. My roles included interviewer, observer as participant, and document reviewer which involved scheduling and conducting semistructured interviews, observing participants participating in the program, and gathering document data to inform the evaluation. Interviews and observations were active roles on the part of the evaluator where conversational tones and participation formed the activities and yielded data directly applicable to evaluating RIP. The interview participants' roles were to inform the program evaluation on their understanding of proficiency and RIP. Since the interviews were semi-structured, the tone was slightly more conversational and guided by the same six-question interview protocol for each participant. Observations were active as oppose to passive, thus, the role of observed participants was to demonstrate activities and was not constrained because dialogue with the observer was allowed. The external evaluator's role was to review methodology, collected data, and findings to ensure veracity in the study.

Project Evaluation

Program evaluations are on-going and re-evaluations will help to determine consistency and quality of outcomes as a result of a program (Gard, Flannigan, &

Cluskey, 2004). Since this project itself was a summative report of an evaluation, the recommendation is to continue monitoring program activities and outcomes to ensure they are occurring as expected. An annual or semiannual reevaluation of RIP processes and perceptions is recommended and further discussed in section four. Specifically, as a follow-up to this project, an additional evaluation is recommended using an outcomes-based design with checklists and questionnaires developed from the findings derived in this project.

Implications Including Social Change

Local Community

With this project, I addressed the needs of the learners in the local community by identifying deficits and recommending improvements in the program intended to maintain proficiency. This project contains the findings of an evaluation of a program intended to maintain proficiency levels at specific job tasks. The project revealed a lack of quality and use of the existing training materials for the maintenance of skills proficiency. This project has not only allowed me to identify issues with the program implementation and management but the social understanding of the program processes and intended purpose. Community leaders are now armed with information that can be used to cause a social change in the understanding of the knowledge and purpose of the program and ultimately the importance of proficiency within the immediate community. The social change implications from this project are vast as the organization moves forward considering the current efforts to improve the training and simulation materials of RIP. Crewmembers, instructors, staff, and commanders were informed of the current

perception of proficiency as it relates to RIP. As training materials are improved and the program becomes a well-understood and utilized aspect of proficiency maintenance, community partners will be able to use this project as a springboard toward future program enhancements.

Far-Reaching

This project may be used in a larger context to inform leaders, administrators, and educators regarding perceptions of proficiency in any number of fields currently using or looking to implement proficiency maintenance tools. Proficiency is a well-known concept in many tasks including teaching, practicing medicine, playing a sport, maintaining a language, flying an aircraft, and so on. The findings from this study have implications on how to manage proficiency maintenance tools, applying aspects of the tool correctly (establishing effective standards and training materials), and encouraging wide-spread knowledge and understanding of the importance of proficiency.

Conclusion

This section covered a discussion of the project including its description, rationale, and goal of providing a program evaluation where none previously existed. A review of literature focused on an interconnected analysis of the project's theoretical foundation. The review specifically addresses why I selected this program evaluation type, how I constructed the project, and the data yielded from the project. I discussed the implementation of the project as well as plans for its evaluation and implications for social change.

In Section 4, I reflect on the project and further discuss the projects strengths, limitations, and implications. The next section also addresses implications for social change and future research, and an analysis of me as scholar and practitioner.

Section 4: Reflections and Conclusions

Introduction

This section afforded an opportunity to reflect on the project and to offer conclusions and implications for future research. Project strengths and limitations are discussed and remediation of the limitations is recommended. Reflections on what I learned about scholarship, project development and evaluation, and leadership and change is provided. Additionally, I offer an analysis of myself as a scholar, practitioner, and project developer. Finally, there is a discussion of the project's potential impact on social change and implications, application, and directions for future research.

Project Strengths

The main strengths of this project lay within the methodology chosen for the study. The choice of a qualitative evaluation report with purposeful selection of participants using the maximum variation of participants with different job requirements and involvement with RIP and data validation using member-checking, triangulation, and an external evaluator improved the strength of the project and were the quality assurance measures used to ensure veracity. This project provided a glimpse of how RIP was run at the site through the perspectives of five participants with varying roles in the program. This multi-perspective view captured a broad range of perceptions of participants' proficiency as well as constructed a graphic representation of the program. Recommendations provided to the site commander proposed improvements about awareness of the program, training materials, and management of the program. These were lacking upon initial implementation.

Limitations

The logic model developed for this project provides a snapshot of how the program was implemented. Snapshots of a program constitute a limitation since they do not adequately show the dynamic nature of the program (e.g., training materials that may have been updated after data were collected and reported). The program evaluation conducted for this project was a summative evaluation, which, due to its sample size and qualitative methodology, lacks generalizability to the DCGS population. The small sample size precluded widespread perspectives of the perception of proficiency because of RIP and because the qualitative data collection methods did not yield measurable data for generalization to the larger population.

Using a qualitative methodology, I was unable to yield data to show determinate change in proficiency levels. I observed participants' perceptions of their proficiency with no metric with which to compare perceived proficiency with performance. In other words, no tool was used to determine what level of proficiency existed among the participants based on any known spectrum of proficiency. For example, no scale was used in conjunction with existing RIP task definitions to determine the levels at which participants were able to demonstrate task performance.

Recommendations for Remediation of Limitations

It is recommended that RIP evaluations remain on going (i.e., formative) and a quantitative approach is added to not only generalize to the larger population but also provide a measure of the effect RIP has on proficiency and performance levels. The follow-up evaluations may include surveys developed from the findings in this study and

disseminated to the worldwide DCGS population for data collection and generalizability. Continuing evaluations of this program using a formative approach will allow stakeholders to view programmatic changes as they occur. The results of this program evaluation were reported during a semiannual Stan/Eval Board where regular reports of programs statuses are provided to the unit commander, however, a more frequent reporting timeline will provide more accurate, real-time assessments of the program. Finally, a quantitative tool such as a matrix that links performance standards with measureable levels of proficiency may be developed to clearly assess proficiency levels objectively as crewmembers progress through training and return to duty from assignments were tasks were seldom performed.

Scholarship

I learned a lot about scholarship through my doctoral journey, but some of the more important aspects can be summarized as a contribution to the field that expands knowledge and learning through dedication and focus. To be a scholar, focus toward a respective field is more than learning about emergent theories and their applications. It is investigating theories and applications that currently exist, understanding their implications, and expanding the knowledge and application such that society can be improved as a result. This isn't to say every scholar needs to be a revolutionary or brilliant inventor, but that they make a contribution to their field by exploring ideas to an end that includes positive social change.

Project Development and Evaluation

Project development and evaluation are areas of expertise that are intertwined with each other and may include scholarship as a part of discovery and implications toward change. Project development requires that an individual carefully research, plan, and coordinate efforts to solve a need. Important to project development is the incorporation of stakeholders' inputs along with the overall organizational mission and outcomes in mind. Doing this requires a level of attention and objectivity on the part of the developer.

Objectivity for a project developer is paramount with regard evaluating progress to determine if outcomes are being achieved. Evaluation is a tool in project development that is used to determine if the project is on track or if it needs to be redirected. This will be accomplished through formative and summative evaluations that are informed by stakeholder participation and data from the field.

Leadership and Change

Leadership and change are ideas necessary for healthy growth and development of any community. One thing I was confused about was the idea that leadership was the same as management. I learned that they are two different concepts entirely. Where management is task focused and directive in nature, leadership aims to show a path and is motivational. Leadership, as it relates to change, is particularly vital. Change can be a very uneasy concept where individuals are resistant to leave their comfortable ways for something new, no matter how potentially beneficial it may be. It is up to leaders to show the path toward positive social change and cultivate the community's understanding and

motivation so that change can be possible. Managers will work closely with leaders and simultaneously exemplify the direction and facilitate tasks associated with the change.

This project required both leadership and change concepts during development and execution. As a leader, I was able to recognize the limiting factors of the program being used (e.g., that no evaluations were conducted to ensure the programs outcomes were being achieved) and influence the community leaders that an evaluation be pursued. The potential subsequent change as a result of the evaluation will project the community forward in their understanding and use of proficiency and proficiency management that will benefit the local organization and the larger Air Force as a whole.

Analysis of Self as Scholar

Scholarship is an arduous endeavor. The dedication, time, and most of all, motivation required to first becoming knowledgeable in the field of study so that it is understood to a level where you can then, not only apply what you know, but analyze and build on its application is a challenge. To overcome the odds of achieving this status, an individual must have a sincere interest in their area of study and improving their society. My interest in adult learning with applications to military members has kept my focus throughout this doctoral process. Without it I surely would have succumb to the demands of the processes required to finish this degree. As a scholar, I aspire to contribute to the field of adult education, specifically with respect to military education and learning. I am excited to have received the chance to achieve scholarship in a field that directly influences adult learning in my career and look forward to continued scholarly achievement in education.

Analysis of Self as Practitioner

What I view as one of the most important aspects of adult learning is the adults' need to know why something is being taught and for immediacy in applying what is learned (Gülden, 2014). This concept is derived from andragogy and is easily identified as a meaningful learning characteristic of adult learners. As a practitioner, I understand the importance of theory and the foundation it paves for adult education but enjoy applying that theory to practice. By incorporating this project within my local setting, I was able to put the culmination of my studies to use and apply theories of learning and evaluation.

Analysis of Self as Project Developer

The opportunity to conduct a program evaluation for this project has opened doors to a potential career path as a program evaluator. The attention, time, and resources required as a project developer was unknown to me in the beginning of this project. I very quickly knew that I had underestimated what lay ahead but was able to adapt. My goals evolved from finishing my education and contributing to my field in order to affect to understanding theories of program application and determining if outcomes were truly met. Finishing the Doctorate of Education program, in a way, became second to determining the effectiveness of an important proficiency maintenance program with the potential to affect the safety of lives. Constructing a theoretical foundation of this project to address outcomes of a program that were unknown was a challenge that quickly evolved into an exciting investigation of theory and practice. As I neared the end of the program evaluation, I realized the potential impact on social change this project has.

The Project's Potential Social Change

The first finding of this study addresses the level of knowledge regarding RIP and its purpose within the DGS. It was observed that there was a lack of awareness of RIP and that its purpose was largely misunderstood. The potential for social change as a result of this project is considerable. The participants in this study have identified that some or all of the components of the program are not known. Additionally, the purpose of this program was seen as more of a checklist item to be signed off before allowing members to work a live mission. Members also showed a lack of concern regarding the accurate reporting and auditing of proficiency tasks as they were accomplished. This implies that proficiency is not seen as an important concept among the participants as much as working the live missions.

The project, its results and recommendations, and directions for future research will likely affect social change by improving awareness of RIP through initial and continuing education of the program and encourage an improved social perception of the importance of proficiency. Changing the social perception of the importance of proficiency may weigh heavily on members' desire to know more about the program and improve the outcomes of proficiency maintenance.

Implications, Applications, and Directions for Future Research

This project has local and wide-spread implications for future research. More data can be gathered on the concept of proficiency and RIP as separate areas of research. Research on how to measure proficiency may provide a useful metric by which proficiency levels can be measured beyond establishing a minimum number of times a

task must be experienced. For this to occur, a measure of proficiency beyond a common definition may be needed to provide standardized levels of proficiency. For example, levels of proficiency may include not proficient, minimally proficient, adequately proficient, expert level proficiency with descriptions of personal characteristics describing performance. In line with this project, additional research may be conducted that will generalize findings to the larger DCGS population. Surveys can be developed from the results of this project and disseminated to the remaining DGS locations to determine widespread proficiency levels.

Applications to the educational field include evolving existing training to be specifically geared toward developing or maintaining proficiency. A finding identified in this project was that training materials were ineffective since they often directed the crewmember to review existing checklists and offered only one "simulation" in the form of a question-answer session. The educational tools used to maintain proficiency in the DCGS need to be evaluated and improved to provide an adequate learning experience that enhances proficiency in lieu of working live missions. Applications of this project may reach into other fields (i.e., nonmilitary applications) considering the proficiency concept is not limited to only one field. By looking at the perceptions of proficiency, I was able to determine that, while RIP appeared to be implemented properly and adequately maintaining proficiency, personal perception was such that RIP had minimal effect on individual proficiency. Therefore, I would recommend examining perceptions of proficiency were other proficiency tools are used in any educational field.

Directions for future research include understanding the impact proficiency has on military personnel and to what extent it can be used to maintain knowledge, skills, and abilities in any number of applications. This specific area of proficiency, which relates to the ISR community through RIP, should be investigated further. A more clear assessment of proficiency levels beyond simply completing a task once every 90 or 180 days may help determine more quantifiable levels of proficiency. For example, applying a proficiency matrix that rates knowledge, skill, and ability levels may help to determine what level of proficiency is currently held among crewmembers. Continued program evaluations are also recommended to provide formative assessments of changes made to RIP that inform leadership on the potential need for future change.

Conclusion

In this section, project strengths and remediation of limitations were discussed. While a strong qualitative methodology using effective participant selection and data validation techniques, some limitations existed. The limitation of this projecting being a summative evaluation and snapshot of how the program was implemented may be remediated through continuing formative evaluations throughout program improvements. What was learned about scholarship, project development and evaluation, and leadership and change was discussed, including an analysis of myself as a scholar, practitioner, and project developer. The potential for impact on social change included improving social awareness of the concept of proficiency, RIP, and the purpose of the program. Implications for future research included expanding the evaluation from one DGS to DCGS-wide in an effort to generalize to the larger population. Applications of this

project to the educational field include improving training materials for better proficiency maintenance and evaluating perceptions of proficiency in other fields that use proficiency maintenance tools. Finally, directions for future research are suggested and include continuing to investigate proficiency within the DCGS through a quantitative lens to determine what levels of proficiency exist and generalize those findings to the larger population.

References

Afifi, R. A., Makhoul, J., Hajj, T. E., & Nakkash, R. T. (2011). Developing a logic model for youth mental health: Participatory research with a refugee community in Beirut. *Health Policy and Planning*, *26*(6), 10. doi:10.1093/heapol/czr001

Air Force ISR Agency. (2010). *Air Force instruction 14-202 volume 2 Air Force ISR agency supplement: intelligence standardization/evaluation program*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-202&btnG.x=0&btnG.y=0&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs

Air Force ISR Agency. (2011). *Air Force distributed common ground system*. Retrieved from http://www.af.mil/information/factsheets/Factsheet_print.asp?fsID=15433&page=1

Air Force ISR Agency. (2013a). *Air Force Distributed Common Ground System evaluation criteria*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-153&btnG.x=18&btnG.y=5&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs

Air Force ISR Agency. (2013b). *Air Force Distributed Common Ground System intelligence training*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-153&btnG.x=18&btnG.y=5&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs

Air Force ISR Agency. (2013c). *Air Force Distributed Common Ground System operations procedures*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-153&btnG.x=18&btnG.y=5&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs

Air Force Reserve Command. (2013). *Glossary of Air Force Reserve terms (fact sheet).* Retrieved from http://www.afrc.af.mil/library/factsheets/factsheet.asp?id=13900Air Force/A2FM. (2008). *Air Force instruction 14-202: intelligence training*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-202&btnG.x=0&btnG.y=0&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-&output=xml_no_dtd&site=AFPW_EPubs

Alwadani, F., & Morsi, M. (2012). Pixeye virtual reality training has the potential of enhancing proficiency of laser trabeculoplasty performed by medical students: A pilot study. *Middle East African Journal of Ophthalmology, 19*(1), 120-122. doi:10.4103/0974-9233.92127

Anderson, L. M., Petticrew, M., Rehfuess, E., Armstrong, R., Ueffing, E., Baker, P., . . . Tugwell, P. (2011). Using logic models to capture complexity in systematic reviews. *Research Synthesis Methods, 2*, 10. doi:10.1002/jrsm.32

Barclay, L., Kruske, S., Bar-Zeev, S., Steenkamp, M., Josif, C., Narjic, C. W., . . . Kildea, S. (2014). Improving Aboriginal maternal and infant health services in the 'Top End' of Austrailia; synthesis of the findings of a health services research program

aimed at engaging stakeholders, developming research capacity and embedding change. *BMC Health Services Research, 14*, 6. doi:10.1186/1472-6963-14-241

Bellini, S., Henry, D., & Pratt, C. (2011). From intuition to data: Using logic models to measure professional development outcomes for educators working with students on the autism spectrum. *Teacher Education and Special Education, 34*(1), 37-51. doi:10.1177/0888406410384153

Blanchard, R. D., Torbeck, L., & Blondeau, W. (2013). AM last page: A snapshot of three common program evaluation approaches. *Academic Medicine, 88*(1), 1. doi:10.1097/ACM.0b013e3182759419

Brabender, V. (2010). The developmental path to expertise in group psychotherapy. *Journal of Contemporary Psychotherapy, 40*(3), 163-173. doi:10.1007/s10879-010-9142-4

Brousselle, A., & Champagne, F. (2011). Program theory evaluation: Logic analysis. *Evaluation and Program Planning, 34*, 69-78. doi:10.1016/j.evalprogplan.2010.04.001

Brown, C. A. (2012). Use of logic models to plan and assess graduate internship experiences. *TechTrends, 56*(6), 37-43. doi:10.1007/s11528-012-0612-2

Brown, D. C., Miskovic, D., Tang, B., & Hanna, G. B. (2010). Impact of established skills in open surgery on the proficiency gain process for laparoscopic surgery. *Surgical Endoscopy, 24*(6), 1420-1426. doi:10.1007/s00464-009-0792-9

Casey, D., & Murphy, K. (2009). Issues in using methodological triangulation in research. *Nurse Researcher, 16*(4), 40-55. doi:10.7748/nr2009.07.16.4.40.c7160

Channon, S., Marsh, K., Jenkins, A., & Robling, M. (2013). Using motivational interviewing as the basis for a peer support programme in high school. *Pastoral Care in Education, 31*(1), 12. doi:10.1080/02643944.2012.731426

Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multi-perspective cocitation analysis. *Journal of the American Society for Information Science & Technology, 61*(7), 1386-1409.

Chiappelli, F., & Cajulis, O. S. (2009). The logic model for evidence-based clinical decision making in dental practice. *Journal of Evidence-Based Dental Practice, 9*(4), 5. doi:10.1016/j.jebdp.2009.03.005

Côté, S. (2004). Does formal OD training matter in determining od proficiency? An analysis of OD expertise in the federal public service of Canada. *Organization Development Journal, 22*(4), 31.

Crane, B. (2010). Using qualitative data to refine a logic model for the Cornell Family Development Credential Program. *The Qualitative Report, 15*(4), 899-931.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson Education.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Culley, J. M., & Polyakova-Norwood, V. (2012). Synchronous online role play for enhancing community, collaboration, and oral presentation proficiency. *Nursing*

Education Perspectives, 33(1), 51-54. doi:10.1177/0193945909335052 or 10.1016/j.heduc.2009.06.007

Das, B. M., Petruzzello, S. J., & Ryan, K. E. (2014). Development of a logic model for a physical activity-based employee wellness program for mass transit workers. *Preventing Chronic Disease Public Health Researc, Practiec, and Policy, 11*, 7. doi:10.5888/pcd11.140124

Department of Defense. (2010). *Department of defense dictionary of military and associated terms*. Retrieved from http://www.dtic.mil/doctrine /new_pubs/jp1_02.pdf

Deptula, D., & Francisco, M. (2010). Air Force ISR operations: Hunting versus gathering. *Air & Space Power Journal, 24*(4), 13-17.

Dudley, M. G., Hill, R., Johnston, J. C., Jones, W. S., LeGare, M., Leibrecht, B. C., . . . Meliza, L. L. (2002). Measuring digital proficiency: Assessment approaches and echelon considerations. Orlando, FL: U.S. Army Research Institute for the Behavioral and Social Sciences.

Dulan, G., Rege, R. V., Hogg, D. C., Gilberg-Fisher, K. M., Arain, N. A., Tesfay, S. T., & Scott, D. J. (2012). Developing a comprehensive, proficiency-based training program for robotic surgery. *Surgery, 152*(3), 477-488. doi:10.1016/j.surg.2012.07.028

Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment. *Psychological Science in the Public Interest, 5*(4), 69-106.

Duru-Nnebue, T. (2012). *An evaluation of a community college workforce-training program.* (Doctor of Education Doctoral Study), Walden University. (3543670)

Fielden, S. J., Rusch, M. L., Masinda, M. T., Sands, J., Frankish, J., & Envoy, B. (2007). Key considerations for logic model development in research partnerships: A Canadian case study. *Evaluation and Program Planning, 30*(2), 10. doi:10.1016/j.evalprogplan.2007.01.002

Finley, A. (2012). Assessment and evaluative studies as change agents in the academy. In D. W. Haward (Ed.), *Transforming undergraduate education: Theory that compels and practices that succeed* (pp. 159-171). Plymouth, UK: Rowman & Littlefield Publishers, Inc.

Frye, A. W., & Hemmer, P. A. (2012). Program evaluation models and related theories: AMEE Guide No. 67. *Medical Teacher, 34*(5), 288-299. doi:10.3109/0142159X.2012.668637

Funnell, S. C., & Rogers, P. J. (2011). *Purposeful program theory: Effective use of theories of change and logic model*. San Francisco: Jossey-Bass.

Gard, C. L., Flannigan, P. N., & Cluskey, M. (2004). Program evaluation: An ongoing systematic process. *Nursing Education Perspectives, 25*(4), 4.

Gargani, J. (2013). What can practitioners learn from theorists' logic models? *Evaluation and Program Planning, 38*, 8. doi:10.1016/j.evalprogplan.2012.03.020

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Boston, MA: Pearson.

Glisan, E. W., Swender, E., & Surface, E. A. (2013). Oral proficiency standards and foreign language teacher candidates: Current findings and future research directions. *Foreign Language Annals, 46*(2), 264-289. doi:10.1111/flan.12030

Gülden, A. (2014). The term of andragogy and the difference between andragogy and pedagogy. *Journal of Faculty of Educational Sciences, 41*(1), 22.

Hancock, D. R., & Algozzine, B. (2011). *Doing case study research: A practical guide for beginning researchers* (2nd ed.). New York: Teachers College Press.

Hayes, H., Parchman, M. L., & Howard, R. (2011). A logic model framework for evaluation and planning in a primary care practice-based research network (PBRN). *Journal of the American Board of Family Medicine, 24*(5), 576-582. doi:10.3122/jabfm.2011.05.110043

Headquarters Air Combat Command. (1998). *Air Combat Command special interest item 98-1, Status of Resources and Training System (SORTS) reporting*. Langley AFB: Air Combat Command.

Headquarters Air Force. (2007). *Responsibilities for Total Force Integration*. AF Instruction 90-1001. Retrieved from http://static.e-publishing.af.mil/production /1/af_a8/publication/afi90-1001/afgm_90-1001.pdf

Hill, J. R., & Thies, J. (2010). Program theory and logic model to address the co-occurences of domestic violence and child maltreatment. *Evaluation and Program Planning, 33*, 9.

Howerton, D., Krolak, J. M. P., Manasterski, A., & Handsfield, J. H. M. P. H. (2010). Proficiency testing performance in U.S. laboratories: Results reported to the

Centers for Medicare & Medicaid Services, 1994 through 2006. *Archives of Pathology & Laboratory Medicine, 134*(5), 751-758.

Hussein, A. (2009). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined? *Journal of Comparative Social Work, 1*, 12.

Kawulich, B. B. (2005). Participant observation as a data collection method. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 6*(2).

Keene, M., & Pullin, A. S. (2011). Realizing an effectiveness revolution in environmental management. *Journal of Environmental Management, 92*(9), 2130-2135. doi:10.1016/j.jenvman.2011.03.035

Kidd, R. E. (2012). Training air traffic controllers: Improving knowledge and proficiency. *Marine Corps Gazette.* Retrieved from http://www.cherrypointatc.com/ATCWeb/Gazette%20Mar%202012.pdf

Klein, G. A., Calderwood, R., & MacGregor, D. (1989). Critical decision method for eliciting knowledge. *IEEE Transactions on Systems, Man and Cybernetics, 19*(3), 462-472. doi:10.1109/21.31053

Knowlton, L. W., & Phillips, C. C. (2013). *The logic model guidebook: Better strategies for great results*. Los Angeles, CA: SAGE Publications, Inc.

Knox, A. B. (1980). Proficiency theory of adult learning. *Contemporary Educational Psychology, 5*(4), 378-404. doi:10.1016/0361-476X(80)90059-4

Levy, C. P. (2006). *A comparison study of F-15C fighter squadron ready aircrew program flying hour scheduling vs. the RAND corporation's flying hour*

scheduling linear program. (Master of Operations Analysis), Air Force Institute of Technology, Air University, Wright-Patterson Air Force Base, Ohio.

Lew, M. D. N., Alwis, W. A. M., & Schmidt, H. G. (2010). Accuracy of students' self-assessment and their beliefs about its utility. *Assessment & Evaluation in Higher Education, 35*(2), 135-156. doi:10.1080/02602930802687737

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice*. San Francisco, CA: Jossey-Bass.

McLaughlin, J. A., & Jordan, G. B. (1999). Logic models: A tool for telling your programs performance story. *Evaluation and Program Planning, 22*(1), 8. doi:10.1016/S0149-7189(98)00042-1

McLaughlin, J. A., & Jordan, G. B. (2010). Using Logic Models. In J. S. Wholey, H. P. Hatry & K. E. Newcomer (Eds.), *Handbook of practical program evaluation* (3rd ed., pp. 55-80). San Francisco, CA: Jossey-Bass.

Militello, L. G., & Klein, G. (2013). Decision-centered design. In J. D. Lee & A. Kirlik (Eds.), *The Oxford handbook of cognitive engineering*. New York: Oxford University Press.

Monroe, L., & Horm, D. M. (2012). Using a logic model to evaluate undergraduate instruction in a laboratory preschool. *Early Education and Development, 23*, 15. doi:10.1080/10409289.2012.619135

Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology, 52*(2), 11. doi:10.1037/0022-0167.52.2.250

Naimoli, J. F., Frymus, D. E., Franco, L. M., & Newsome, M. H. (2014). A community health worker "logic model": Towards a theory of enhanced performance in low- and middle-income countries. *Human Resources for Health, 12*, 1-16. doi:10.1186/1478-4491-12-56

National Headquaters Civil Air Patrol. (2012). *Operations*. Retrived from http://www.capmembers.com/media/cms/R060_001_132EEB0197465.pdf

Neal, D. (2010). Aiming for efficiency rather than proficiency. *Journal of Economic Perspectives, 24*(3), 119-132. doi:10.1257/jep.24.3.119

Newton, X. A., Poon, R. C., Nunes, N. L., & Stone, E. M. (2013). Research on teacher education programs: Logic model approach. *Evaluation and Program Planning, 36*, 9. doi:10.1016/j.evalprogplan.2012.08.001

The No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).

Operations Support Training. (2012). *DGS Master Training Plan*. Anonymous: Anonymous.

Porteous, N. L., & Montague, S. (2014). From discrete evaluations to a holistic approach: The case of public health agency of Canada. In M. L. Loud & J. Mayne (Eds.), *Enhancing evaluation use: Insights from internal evaluation units*. Thousand Oaks, CA: SAGE Publications, Inc.

Porteous, N. L., Sheldrick, B. J., & Stewart, P. J. (2002). Introducing program teams to logic models: Facilitating the learning process. *The Canadian Journal of Program Evaluation, 17*(3), 113-141.

Renger, R., Bartel, G., & Foltysova, J. (2013). The reciprocal relationship between implementation theory and program theory in assisting program design and decision-making. *The Canadian Journal of Program Evaluation, 28*(1), 27-41.

Renger, R., Page, M., & Renger, J. (2007). What an eight-year-old can teach us about logic modeling and mainstreaming. *The Canadian Journal of Program Evaluation, 22*(1), 195-204.

Robbins, P. (2009). Performance proficiency as a measure of learning needs. *Performance Improvement, 48*(3), 21-25. doi:10.1002/pfi.20059

Rouhana, A. M. (2012). The in-service zone. *The Public Manager, 41*(4), 16-19.

Russell, M., & Kingsley, M. (2011). Influence of exercise on skill proficiency in soccer. *Sports Medicine, 41*(7), 523-539. doi:10.2165/11589130-000000000-00000

Ryan, W., & Smith, J. D. (2009). Antibullying programs in schools: How effective are evaluation practices? *The Official Journal of the Society for Prevention Research, 10*, 248-259. doi:10.1007/s11121-009-0128-y

Schmidle, T. (2012). Does the final score truly count? Performance report scorecards and the government performance and results act of 1993. *Public Administration Review, 72*(6), 926-934. doi:10.1111/j.1540-6210.2012.02658.x

Shi, L.-F. (2011). How "proficient" is proficient? Subjective proficiency as a predictor of bilingual listeners' recognition of English words. *American Journal of Audiology (Online), 20*(1), 19-32. doi:10.1044/1059-0889(2011/10-0013)

Spaulding, D. T. (2008). *Program evaluation in practice*. San Francisco, CA: Jossey-Bass.

SRA International, I. (2013). Mission-specific domain expertise: Modeling, simulation & analysis. Retrieved from http://www.sra.com/simulation/index.php

Sridharan, S., & Nakaima, A. (2011). Ten steps to making evaluation matter. *Evaluation and Program Planning, 31*, 135-146. doi:10.1016/j.evalprogplan.2010.09.003

Stillion, J. W. (1999). *Blunting the talons: The impact of peace operations deployments on USAF fighter crew combat skills.* Diss. RAND Graduate School, 1999. Retrieved from http://www.rand.org/content/dam/rand/pubs /rgs_dissertations/2006/RGSD147.pdf

Suri, H. (2011). Purposeful sampling in qualitative research synthesis. *Qualitative Research Journal, 11*(2), 15. doi:10.3316/QRJ1102063

Talebpour, M., Alijani, A., Hanna, G. B., Moosa, Z., Tang, B., & Cuschieri, A. (2009). Proficiency-gain curve for an advanced laparoscopic procedure defined by observation clinical human reliability assessment (OCHRA). *Surgical Endoscopy, 23*(4), 869-875. doi:10.1007/s00464-008-0088-5

Taut, S., Santelices, V., Araya, C., & Manzi, J. (2010). Theory underlying a national teacher evaluation program. *Evaluation and Program Planning, 33*, 477-486. doi:10.1016/j.evalprogplan.2010.01.002

Tremblay, A. (2011). Proficiency assessment standards in second language acquisition research. *Studies in Second Language Acquisition, 33*(3), 339-372.

Tung, E. E., & Thomas, M. R. (2009). Use of a geriatric home visit experience to teach medical students the functional status assessment. *Journal of General Internal Medicine, 24*(2), 244-246. doi:10.1007/s11606-008-0853-0

Unrau, Y. A. (2001). Using client exit interviews to illuminate outcomes in program logic models: A case example. *Evaluation and Program Planning, 24*, 9. doi:10.1016/S0149-7189(01)00029-5

Utley, R. (2011). *Theory and research for academic nurse educators: Application to practice*. Sudbury, MA: Jones and Bartlett Publishers, L.L.C.

van der Vleuten, C. P. M., Schuwirth, L. W. T., Scheele, F., Driessen, E. W., Hodges, B., & Currie, E. (2010). The assessment of professional competence: Building blocks for theory development. *Best Practice & Research Clinical Obstetrics and Gynecology, 24*(6), 703-719. doi:10.1016/j.bpobgyn.2010.04.001

Van Sickle, K. R., Buck, L., Willis, R., Mangram, A., Truitt, M. S., Shabahang, M., . . . Scott, D. (2010). A multicenter, simulation-based skills training collaborative using shared GI mentor II systems: Results from the Texas association of surgical laboratories (TASSL) flexible endoscopy curriculum. *Surgical Endoscopy, 25*, 2980-2986. doi:10.1007/s00464-011-1656-7

Vijulie, I., Manea, G., Matei, E., Tirla, L., & Trinca, I. (2013). Analysis of farming types' characteristics in the Boianu Plain (Romania). *Journal of Studies and Research in Human Geography, 7.1*, 61-70.

W.K. Kellogg Foundation. (2004). Using logic models to bring together planning, evaluation, and action: Logic model development guide: W.K. Kellogg Foundation.

Walker, D., & Geiss, K. (2009). Future Air Force training. In J. Cohn, D. Nicholson & D. Schmorrow (Eds.), *The PSI handbook of virtual environments for training and education: Developments for the military and beyond* (Vol. 3, pp. 10). Westport, CT: Praeger Security International.

Youker, B. W., Ingraham, A., & Bayer, N. (2014). An assessment of goal-free evaluation: Case studies of four goal-free evaluations. *Evaluation and Program Planning*, *46*(1), 7. doi:10.1016/j.evalprogplan.2014.05.002

Appendix A: The Project

The Influence of the Ready Intelligence Program on Crewmembers' Perception of Proficiency in an Air Force Weapon System m

A supplementary evaluation for [redacted]

Presented by TSgt James M. Bane

Executive Summary

The [redacted] Group commander directed this project with the purpose of studying how the Ready Intelligence Program (RIP) effects perceptions of proficiency levels of crewmembers because of RIP since no program evaluation has been previously conducted. A qualitative methodology was used to gather data via interviews, observations, and document reviews. Participants were selected using a purposeful strategy with maximum variation to ensure a wide range of perspectives was gathered. Data were validated through member checking, triangulation, and external evaluator review.

The resulting project draws attention to participants' lack of awareness of RIP and its intended purpose. Processes were unknown or not adhered to by crewmembers, instructors, and program managers. Perceptions of proficiency because of RIP varied and included both positive and negative views. Further investigations revealed a misapplication of RIP events to assigned mission sets where specificity was lacking that led to the development of generic and ineffective training materials. RIP training was observed to not cover the entirety of mission positions requiring some crewmembers to relearn tasks rarely accomplished.

This project enabled perceptions to be evaluated and concluded that perceptions of proficiency because of RIP were minimally effected. Unrelated to RIP, perceptions of proficiency were improved through the hands-on application of knowledge and skills required to accomplish real-world missions. It is recommended that awareness of RIP, its requirements for proper implementation, and intended purpose be clarified to all

crewmembers to cause a social change in the understanding of the program and foster a culture that is attune to the necessity of proficiency maintenance.

Problem Definition and Literature Review

This study was prompted by a lack of empirical evidence showing if the desired outcome of RIP has been met. No program evaluations were found supporting the creation of the program or its continued use. The intent of RIP is outlined in Air Force Instruction (AFI) 14-202 volume one, as ensuring that proficiency in assigned duty positions is maintained through the performance of specific mission essential tasks with sufficient frequency (Air Force/A2FM, 2008). With no data demonstrating if the proficiency outcome is being met, it is unknown if RIP effective. A gap in practice exists because a program is being used at the local level as the primary source of maintaining proficiency and no assessment of its outcome is available.

Information addressing RIP is limited to local and higher headquarters (HHQ) published instructions and outlines generic definitions with no documented data or evidence of effectiveness. Scholarly literature on RIP is minimal; literature found regarding proficiency in the Air Force primarily addressed the Ready Aircrew Program (RAP) or other career fields outside of the Distributed Common Ground System (DCGS) intelligence community (i.e., language maintenance) for which RIP was implemented. Literature used to inform this project focused on the overarching concept of proficiency, its various applications, and methods for assessing proficiency through clearly developed standards. Additionally, literature supporting logic modeling as a conceptual framework was used to construct this study and support the methodology.

The literature review of proficiency provided an overview to include varying definitions and applications of proficiency including constructing an adult learning theory (Knox, 1980), differentiating basic and expert ability levels (Brabender, 2010), maintaining and improving knowledge and skill (Alwadani & Morsi, 2012; Deptula & Francisco, 2010; Howerton et al., 2010; Russell & Kingsley, 2011; Stillion, 1999), and initially learning knowledge and skill (Alwadani & Morsi, 2012; Culley & Polyakova-Norwood, 2012; Dulan et al., 2012). Developing proficiency standards and assessment methods were also important aspects of using proficiency identified through a review of the existing literature (Deptula & Francisco, 2010; Van Sickle et al., 2010; Walker & Geiss, 2009).

Stakeholders and Participants

The intended users of this report are stakeholders of RIP including unit commanders, staff, instructors, and crewmembers with interests in or requirements of qualification proficiency maintenance. Their need for information includes understanding RIP and its purpose as well as their responsibilities as outlined by RIP. Participants in this study were purposefully selected to ensure a wide range of perspectives was included during the data collection. Their need for information is the same as any stakeholder involved with RIP and includes understanding the purpose of and responsibilities outlined by RIP.

Project Objectives

The purpose of this qualitative study was to evaluate RIP to determine if proficiency is perceived to be maintained via current implemented practices. This project

is intended to be used to provide an understanding of RIP and report if the program outcome of proficiency maintenance is met.

Program Description

RIP is defined as a program intended to ensure proficiency of essential tasks within the DCGS (Air Force ISR Agency, 2013b). It is the primary source of maintaining proficiency of DCGS qualifications other than sitting live missions. Components of this program were identified through the use of the logic model including its inputs, outputs, and outcomes and can be seen graphically in the logic model in Appendix B.

Inputs of this program can be broken down into three major categories including personnel, materials or tools, and facility and equipment. Personnel are the driving force of RIP implementation and include instructors, program managers, auditors, and crewmembers. Instructors' roles are to provide training to crewmembers when necessary (e.g., conducting simulated missions with scenarios used to provide realistic exposure to specific mission events) to ensure proficiency is maintained. Instructors contribute to the development of RIP training materials at the local level. Program managers are primarily responsible for assigning RIP tasks and ensuring currency is reported by all crewmembers. The program manager is also responsible for ensuring the unit commander (unit/CC) is apprised of crewmembers' currency status. Auditors have the unique responsibility of validating accuracy of crewmembers' training activity report (i.e., that reports of RIP event completion is true). Crewmembers' role within RIP is to report when RIP events have been experienced and, when they have not, to initiate self-training via

simulation materials to maintain their currency in completing specific tasks to maintain proficiency.

Materials and tools associated with RIP include training materials in the form of PowerPoint presentations and the computer application called Patriot Excalibur (PEX) which is used as the tracking mechanism through which crewmembers report task completion via training activity reports. PEX is also automatically notifies crewmembers when they are coming due to complete specific mission events and is used to generate currency reports. Classified facilities are a resource of RIP considering certain events are classified to protect national security. Computers are also resources that assist with completing events, training, and tracking currency.

Outputs are the activities and participation required to ensure the outcome of proficiency is met. Activities include:

- RIP task assignment to crewmembers that have attained mission qualification
- Instructor-led simulation training
- Observation of non-basic mission capable/combat mission crewmembers
- Self-review of PowerPoint slides of knowledge portions of mission event procedures
- Simulation of RIP events/tasks to ensure acceptable performance levels
- Training activity reports for RIP events or tasks that were completed
- A textual report for Unit/CC reporting currency status of crewmembers

Participation of personnel includes:

- Conducting self-initiated reviews of simulation training material

- Conducting instructor-led simulation training
- Submitting training activity reports via Patriot Excalibur after RIP events are experienced either live or simulated
- Approval of training activity reports by approved auditors
- Providing a monthly currency report to Unit/CC showing currency status of crewmembers

The outcomes of the program are identified via short- and long-term goals. The short-term goals include ensuring pre-mission training requirements are met, maintaining or regaining currency at performing responsibilities, reminding crewmembers of currency expiration and to sit live missions and review critical items checklists. Long-term goals include members maintaining personal accountability of their own proficiency, maintenance of a mission proficient force via positional currency (i.e., proficiency via periodic task completion), and sustained overall mission readiness.

Several assumptions and external factors are included in the implementation of RIP. Assumptions include that a secure facility with computer systems used for live or simulated missions will be available, participation in RIP will occur as required, crewmembers understand procedures for completion of RIP tasks and reporting training activity reports, and that training materials are up-to-date. External factors to the program that may affect proficiency maintenance outside of RIP include any civilian employment in ISR fields that improve individual readiness or understanding of certain events/tasks and individual participation in professional development training or formal education to enhance proficiency.

While the Air Force ISR Agency outlines the specific DCGS tasks and periodicity (1/90 days or 1/180 days) at which tasks must be experienced to maintain proficiencies (Air Force ISR Agency, 2013b), individual units are currently left to their own devices to accomplish the tasks how they see fit. Units determine what tasks are to be experienced live, simulated case-by-case, or entirely simulated. The instructors develop training materials for simulated events in-house and identify which members are to maintain Combat Mission Ready (CMR) status by sitting 1/90 days or Basic Mission Capable (BMC) status by sitting 1/180 days.

RIP is projected to be the foundation of future simulation training for DCGS known as the DCGS Weapon System Trainer (DWST) (B. Braithwaite, Personal Communication, December 2012). As with other weapon systems, a simulation trainer provides realistic simulated events via advanced technology to maintain proficiency in lieu of experiencing real-world mission events. The tasks within RIP are used to inform the search for historic data to be used for simulations and the construction of scenario-based events.

Resources Used to Implement this Project

The primary resource used to provide this evaluation report was time. As the program evaluator, I devoted the majority of time used to plan the study and collect and evaluate data for the purpose of generating this project. Other contributors of time included the participants of the study through their contributions including interviews and observations. Additional resources used included computer systems used to analyze and

report data and facilities to conduct interviews and observations. No extra financial, personnel, or material resources were required for this project.

Data Sources and Methods

This program evaluation used a qualitative methodology to gather data regarding perceptions of proficiency because of RIP. The theoretical foundation of the study was the logic model which was used to graphically depict the current state of the program including resources, activities, and outcomes (Knowlton & Phillips, 2013; W.K. Kellogg Foundation, 2004). Included in the logic model were assumptions and external factors contributing to RIP. Five participants were purposefully selected to ensure a wide range of perceptions of the program was gathered. Maximum variation strategy, to ensure a wide range of perceptions from different roles within RIP, was considered when making participant selection. Data were collected using interviews, observations, and document reviews. Validation of data included member-checking of transcripts and findings; triangulation of interviews, observations, and document reviews; and an external evaluator review of methodology, collected data, and findings. The conclusion of the study was reported during the site commander's standardization and evaluation board and findings were subsequently presented with recommendations (see Appendix A).

Evaluation Question

The guiding question of this study asks how proficiency is perceived by DCGS crewmembers at a military installation with Intelligence, Surveillance, and Reconnaissance (ISR) missions concerning RIP.

Procedures for Selecting a Sample of Participants

Using purposeful sampling, with a maximal variation strategy, participants were selected from the DGS population of crewmembers. Purposeful sampling helps to understand a central phenomenon and gather information-rich feedback from selected participants (Creswell, 2012). The maximum variation strategy allows researchers to gather multiple perspectives that are known to be different from one participant to the next (Lodico et al., 2010; Suri, 2011). As such, participants selected for the study were qualified in the weapon system (e.g., holding at least one crew position, such as, geospatial analyst, technical reporter, imagery mission supervisor, etc.) and held varying levels of responsibility. The multiple perspectives these members provided were used to support common themes (Chen et al., 2010) that arose from analyzing the data. Three qualified crewmembers were selected; one was current and actively sitting mission (e.g., assigned to an active duty AF flight), one was current and not actively sitting mission (e.g., working in an office maintaining unit programs), and one was noncurrent (e.g., holding an unexpired weapon system qualification but having lapsed the currency requirement). An additional two participants, an instructor and RIP training manager, were selected to add alternate, non-crewmember perspectives of the perception of proficiency within the DGS.

The number of participants chosen for this evaluation totaled five (all qualified in the weapon system, three working missions and two responsible for managing RIP). All individuals stood to have unique perspectives of proficiency and RIP and contributed valuable information toward the evaluation results. The number of participants chosen

was not excessive as to provide an in-depth picture of the program; additional participants were not selected since each individual added would add a proportional amount of time to the data collection and analysis (Creswell, 2012).

Procedures for Data Collection

Data collection included document reviews (training materials, trackers, reports, training records); semi-structured, audio-recorded interviews regarding perception of RIP processes and effect on proficiency; and observations of RIP task completion and program processes.

Reviewing training materials, trackers, reports, and training records objectively revealed how RIP was being maintained and how well proficiency was tracked by personnel. These documents acted as physical evidence, linking what was being researched (perceptions of proficiency) with data maintained for record (Hancock & Algozzine, 2011). Training materials and training records were needed to objectively substantiate what materials and methods were used for training and how training is accomplished. Trackers and reports contained evidence of who was reportedly accomplishing RIP training and at what periodicity. Data from these documents were transcribed and grouped with respective participants, as appropriate, with personally identifiable information removed (real names, social security numbers, etc.). Additionally, sensitive or classified data were not included with the documents collected for review or published in any way.

Interviews were semi-structured with specific open-ended questions (see Appendix B) that were pre-determined. Open-ended questions allowed for some

flexibility in the participants' responses and probing questions were used to better understand participants' meanings and perceptions. Probing questions included silence, sounds, a single word, or complete sentences (Glesne, 2011). For example, I probed responses by saying, "what else," "tell me more," or "I want to make sure I understand what you mean" and repeated what the participant said (Glesne, 2011). An interview guide, or protocol (see Appendix B), was used to annotate which questions to ask all of the participants. Five one-on-one interviews were conducted and were planned to last 45 minutes each. No participant proceeded past the 45-minute timeframe. The primary location for interviews was a base education center classroom located away from the primary duty center to assist with maintaining confidentiality. Should the primary location have become inaccessible, the secondary location was a meeting room at the base library. The interviews were coordinated with the participants and scheduled during times where they were not required for critical missions (e.g., not scheduled for mission or during known extended breaks). Participant coordination and the space for the interviews was reserved two weeks in advance. With permission from the participant, the interviews were audio-recorded to allow for subsequent review and transcription.

Three observations were conducted to gather more objective data regarding the processes of RIP (Hancock & Algozzine, 2011; Kawulich, 2005). One observation was conducted during a live mission on the operations floor, one in a back shop to observe non-mission RIP procedures, and one to observe the management of RIP itself. An observation protocol (see Appendix C) was used to include when and where the

observation will take place, the participants being observed, and what activities or events were being observed (Hancock & Algozzine, 2011).

Principal Findings and Recommendations

A lack of knowledge or adherence of RIP

Finding: A lack of knowledge/adherence of RIP was observed throughout participant responses, observations, and document reviews. At least some of the processes of RIP were unknown or not adhered to:

- Initial training on RIP and assigning RIP tasks upon evaluation completion
- Locating simulation training materials, conducting simulation training, and proper documentation of RIP training in training records by an instructor
- RIP task training activity reports (TAR) and auditing RIP tasks to ensure compliance
- RIP status report generation and delivery to unit commanders

The purpose of RIP was unknown among participants and was seen merely as another step toward being permitted to work live missions. A lack of social understanding of proficiency or acceptance of RIP as a viable proficiency maintenance tool may perpetuate a culture where RIP remains unknown to its members.

Recommendation: Addressing the awareness of RIP as a tool to help maintain proficiency at this DGS will be a vital first step in ensuring not only the success of RIP but the continued proficiency of crewmembers. Training regarding the purpose of RIP and its processes and requirements are needed for crewmembers as they are assigned to the site. After mission qualification training is complete, assigning of RIP tasks must be

accomplished to ensure members are receiving proper notification of periodic requirements. Addressing the understanding of the purpose of RIP will be vital in causing a cultural acceptance of proficiency and RIP as important concepts at this DGS. This social change will be needed to ensure program and proficiency longevity.

Varied perceptions of proficiency gained from RIP

Findings: Perceptions of proficiency because of RIP varied among the participants. A lack of knowledge and understanding of purpose of RIP may contribute to participants' perceptions. The lack of initial training and training materials may be fundamental in the perceptions identified from . Positive perceptions of RIP included: helping with reminding crewmembers to sit live missions and keeping crewmembers updated on critical items checklists. Negative perceptions included viewing RIP as a checkbox requirement to sit mission and not as a training tool to maintain proficiency, not viewing RIP as beneficial or effective in lieu of sitting live mission, and that there was a lack of integrity of RIP task reporting—people were reporting tasks whether or not they sat mission or completed training (i.e., false reporting).

Recommendation: As mentioned in the recommendation for the previous finding, training of RIP and its purpose is vital to effect social change toward proficiency and proficiency maintenance. To improve negative perceptions, initial and continuation training are needed to explain how RIP is more than a mere checkbox requirement and how it stands to improve proficiency where live mission events are rarely experienced. Training materials must be improved to include content immediately applicable to crewmembers' assigned missions. Perceptions of proficiency have been known to be

improved through formal education with regard to specific task skills (Côté, 2004). Provide formal training for required RIP tasks that includes real-world applicable scenarios, historic mission data, or shadowed mission events to improve the perception of RIP as beneficial training. Mitigate false reporting by encouraging reporting of tasks immediately after they are experienced as oppose to reporting at the end of a 90-day period. Additionally, stressing the importance of integrity of auditing tasks is necessary considering the significance of RIP as a report of currency and implied proficiency levels.

Errors in application of RIP training and coverage of mission tasks

Findings: How RIP applies to current missions and qualifications does not allow crewmembers to maintain proficiency across mission sets, specifically in the case of medium vs. high altitude. RIP events are generic (e.g., reporting observed activity) so that the tasks may be tailored to specific sites with particular mission requirements (e.g., producing still imagery, textual, video, or voice reports). The RIP tasks were perceived to only cover critical items and not the entirety of positional qualifications, however, data revealed that RIP does cover additional, non-critical items. Crewmembers are required to maintain proficiency for all aspects of their qualification but RIP does not specifically assist with this when crewmembers are assigned to only one type of mission (i.e., FMV). When the time arises for crewmembers to be evaluated during their periodic evaluations, they must relearn the other aspects of the qualifications.

Recommendation: Tailor RIP tasks to meet local mission requirements. Specifically identify what activities must occur or deliverables need to be created for each mission position. Work with the higher headquarters for coordinating use of

existing, relevant training materials as they are revised to ensure the most effective training is delivered and standardization is maintained across the weapon system. Relate RIP training materials for each weapon system qualification with their respective evaluation profiles to help maintain proficiency of the entire qualification and update crewmembers on the change to reassure them that RIP will maintain positional proficiency and not simply a review of checklist or critical items.

A lack of effective RIP management

Findings: A lack of effective RIP management was observed throughout the evaluation. Credibility of training activity reports was compromised because their auditing was observed to occur without true validation. The training resources used to provide simulations were not current and lacked substance to train crewmembers on the tasks to satisfy required RIP events. This lack of quality training appears to cause an absence of engagement among crewmembers that contributes to a lack of knowledge and understanding of the program as reported in the first finding. Also mentioned in the previous findings included how RIP tasks were not assigned to every member at the conclusion of their evaluation and that reports were not generated for unit commanders to inform them of the site's crewmembers' proficiency status. Finally, management of RIP was observed to be a challenge for one person to take on considering the size of the organization(s). With over 1,400 individuals, ensuring auditors are validating RIP task completion and maintaining current training materials appeared to be challenging.

Recommendation: A cultural shift in how proficiency is viewed must occur to ensure integrity of RIP auditors. When developing or improving initial and continuation

training regarding RIP and its importance to mission success, the role of auditor must be emphasized as a critical one. Auditors must be able to validate that crewmembers completed RIP events as they occurred or undergo simulation training where live events are not experienced. Academic training materials and simulated events must be improved to include more substance than was observed during the evaluation. To better maintain proficiency and engage crewmembers in participating in RIP simulation training, historical data demonstrating real-world events that can be used as simulation scenarios must be developed. At the conclusion of all positional evaluations where crewmembers initially earn their weapon system qualification(s), RIP tasks must be assigned with due dates to ensure they are being tracked. A report addressed to the unit commanders must be generated in accordance with Air Force instructions that provides a current status update of RIP task proficiency at the site. Finally, with the size and number of units at this sites, assignment of additional RIP managers for each squadron may improve compliance with instructions governing RIP and ensure proficiency is adequately implemented.

Conclusion

With this project I was able to show perception of proficiency pertaining to RIP as well as explain what components of the program exist and are being implemented effectively. The findings revealed a program that is effective in encouraging crewmembers to review positional checklists, but appears to be minimally effective with regard to maintaining proficiency. A lack of knowledge and understanding of the purpose of the program preclude effective implementation. The participants feel that proficiency

is minimally affected because of RIP and is more affected by real-world mission. Future program evaluations are encouraged to ensure recommended improvements are made and social change toward understanding and accepting proficiency occurs.

References

Air Force ISR Agency. (2013). *Air Force Distributed Common Ground System intelligence training*. Retrieved from http://www.e-publishing.af.mil/?txtSearchWord=14-153&btnG.x=18&btnG.y=5&client=AFPW_EPubs&proxystylesheet=AFPW_EPubs&ie=UTF-8&oe=UTF-8&output=xml_no_dtd&site=AFPW_EPubs

Alwadani, F., & Morsi, M. (2012). Pixeye virtual reality training has the potential of enhancing proficiency of laser trabeculoplasty performed by medical students: A pilot study. *Middle East African Journal of Ophthalmology, 19*(1), 120-122. doi:10.4103/0974-9233.92127

Brabender, V. (2010). The developmental path to expertise in group psychotherapy. *Journal of Contemporary Psychotherapy, 40*(3), 163-173. doi:10.1007/s10879-010-9142-4

Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multi-perspective cocitation analysis. *Journal of the American Society for Information Science & Technology, 61*(7), 1386-1409.

Côté, S. (2004). Does formal OD training matter in determining od proficiency? An analysis of OD expertise in the federal public service of Canada. *Organization Development Journal, 22*(4), 31.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson Education.

Culley, J. M., & Polyakova-Norwood, V. (2012). Synchronous online role play for enhancing community, collaboration, and oral presentation proficiency. *Nursing Education Perspectives, 33*(1), 51-54. doi:10.1177/0193945909335052 or 10.1016/j.heduc.2009.06.007

Deptula, D., & Francisco, M. (2010). Air Force ISR operations: Hunting versus gathering. *Air & Space Power Journal, 24*(4), 13-17.

Dulan, G., Rege, R. V., Hogg, D. C., Gilberg-Fisher, K. M., Arain, N. A., Tesfay, S. T., & Scott, D. J. (2012). Developing a comprehensive, proficiency-based training program for robotic surgery. *Surgery, 152*(3), 477-488. doi:10.1016/j.surg.2012.07.028

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Boston, MA: Pearson.

Hancock, D. R., & Algozzine, B. (2011). *Doing case study research: A practical guide for beginning researchers* (2nd ed.). New York: Teachers College Press.

Howerton, D., Krolak, J. M. P., Manasterski, A., & Handsfield, J. H. M. P. H. (2010). Proficiency testing performance in U.S. laboratories: Results reported to the Centers for Medicare & Medicaid Services, 1994 through 2006. *Archives of Pathology & Laboratory Medicine, 134*(5), 751-758.

Kawulich, B. B. (2005). Participant observation as a data collection method. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 6*(2).

Knowlton, L. W., & Phillips, C. C. (2013). *The logic model guidebook: Better strategies for great results*. Los Angeles, CA: SAGE Publications, Inc.

Knox, A. B. (1980). Proficiency theory of adult learning. *Contemporary Educational Psychology, 5*(4), 378-404. doi:10.1016/0361-476X(80)90059-4

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2010). *Methods in educational research: From theory to practice*. San Francisco, CA: Jossey-Bass.

Russell, M., & Kingsley, M. (2011). Influence of exercise on skill proficiency in soccer. *Sports Medicine, 41*(7), 523-539. doi:10.2165/11589130-000000000-00000

Stillion, J. W. (1999). *Blunting the talons: The impact of peace operations deployments on USAF fighter crew combat skills.* Diss. RAND Graduate School, 1999. Retrieved from http://www.rand.org/content/dam/rand/pubs /rgs_dissertations/2006/RGSD147.pdf

Suri, H. (2011). Purposeful sampling in qualitative research synthesis. *Qualitative Research Journal, 11*(2), 15. doi:10.3316/QRJ1102063

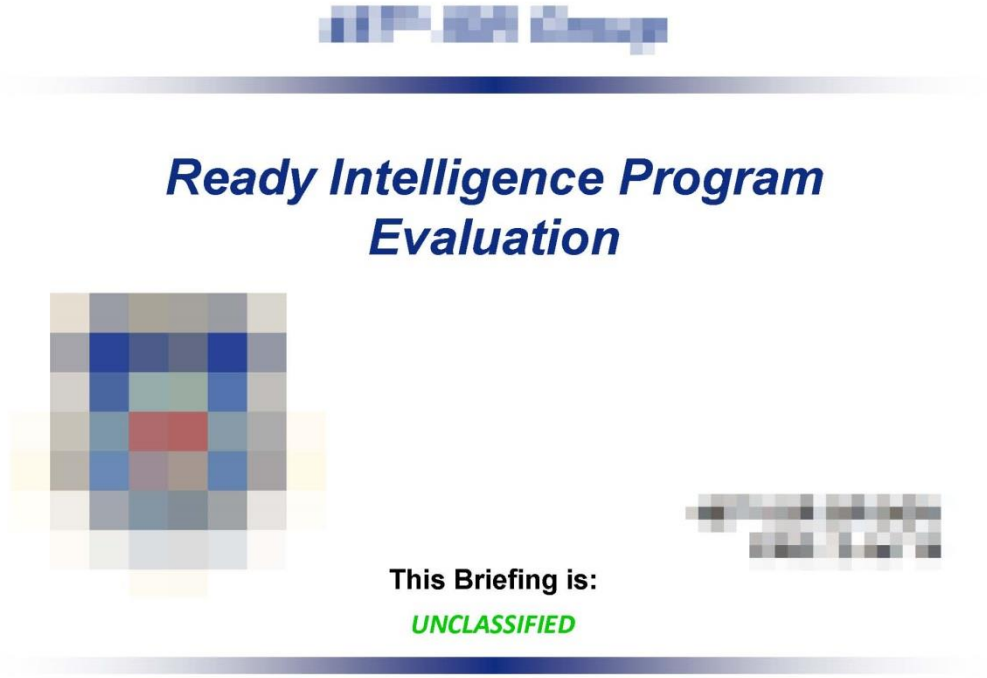
Van Sickle, K. R., Buck, L., Willis, R., Mangram, A., Truitt, M. S., Shabahang, M., . . . Scott, D. (2010). A multicenter, simulation-based skills training collaborative using shared GI mentor II systems: Results from the Texas association of surgical laboratories (TASSL) flexible endoscopy curriculum. *Surgical Endoscopy, 25*, 2980-2986. doi:10.1007/s00464-011-1656-7

W.K. Kellogg Foundation. (2004). Using logic models to bring together planning, evaluation, and action: Logic model development guide: W.K. Kellogg Foundation.

Walker, D., & Geiss, K. (2009). Future Air Force training. In J. Cohn, D. Nicholson & D. Schmorrow (Eds.), *The PSI handbook of virtual environments for training and*

education: Developments for the military and beyond (Vol. 3, pp. 10). Westport, CT: Praeger Security International.

Appendix A: Ready Intelligence Program Evaluation (PowerPoint briefing)



Problem

- Lack of empirical evidence of effectiveness
- No program evaluation conducted

Rationale

- Primary program for maintaining proficiency
- Projected foundation of DCGS simulation trainer

Methodology – Evaluation Type

- **Qualitative program evaluation**
  - Focuses on crewmembers' perception of proficiency
  - Exceeds quantitative methodology for understanding impressions and viewpoints
  - Context-dependent vs quantitatively context-free
  - Spring-board to develop quantitative questionnaire(s)
- **Outcome-based (proficiency via RIP tasks)**
- **Logic Model as theoretical foundation**
  - Graphic representation of RIP
  - Effective at any stage of program implementation

UNCLASSIFIED 5

Methodology – Participant Selection

- **Five participants were selected**
  - **Purposeful selection to ensure accurate depiction**
  - **Maximum variation to ensure multiple viewpoints**
  - **Confidentiality of participants made paramount**

- ***A qualified, CMR crewmember actively working mission***
- ***A qualified, CMR crewmember not actively working mission***
- ***A qualified, N-CMR crewmember***
- ***A qualified, CMR INSTR with experience sitting with N-CMR crewmembers***
- ***A proficiency program manager***

UNCLASSIFIED 6

Methodology – Data Collection/Analysis

- Qualitative data collection
  - Five Interviews
  - Three Observations
  - Document reviews: training records, reports, PEX (data automation system), AF Instructions
- Data Analysis
  - Interview transcripts and field notes coded
  - Themes derived from coded data
  - Validity – member-checking, data triangulation, external evaluator review

Findings

Overarching themes

1. Knowledge/adherence of RIP
2. Perceptions of how RIP effects proficiency
3. Application of RIP toward MSNs/Quals
4. Management of RIP

Findings

1. **Knowledge/adherence of RIP**

   A. **Some of the processes of RIP are unknown or not adhered to among ALL of the participants**
   - Initial RIP training and assigning RIP tasks
   - Locating simulation training materials, conducting simulation training, and proper documentation of RIP training by an INSTR
   - Training activity reports and auditing RIP tasks
   - Unit/CC RIP status report

   B. **Purpose of the Ready Intelligence Program**

UNCLASSIFIED

Findings

2. **Perceptions of how RIP effects proficiency**

   A. **Positive perceptions**
   - Reminds crewmembers to sit live missions
   - Keeps crewmembers updated on critical items checklists

   B. **Negative perceptions**
   - Seen as a checkbox requirement to sit mission, not as a training tool to enhance/maintain proficiency
   - Not viewed as beneficial or effective
   - Integrity of RIP task reporting is lacking

UNCLASSIFIED

Findings

3. Application of RIP to MSNs/Quals

A. RIP not all-encompassing
- Does not maintain proficiency across mission sets
- Perceived to focus critical items, not all positional tasks

B. Individuals with a particular mission focus must relearn other aspects of their qualifications

C. RIP perceived to not effect proficiency

UNCLASSIFIED

Findings

4. Management of RIP

A. TAR auditing process is lacking credibility; authoritative oversight is needed to enforce integrity

B. Training resources are not current, an absence of engagement exists

C. Management of RIP may be too much for one person

D. RIP tasks are not assigned to every crewmember

E. Report for Unit/CCs not generated

UNCLASSIFIED

Recommendations

- **Ensure RIP training (processes and purpose) during MQT and follow-up training events**
- **Analyze RIP tasks and training materials for applicability**
  - Ensure imagery tasks adequately cover all aspects of MSN
  - Add substance to RIP training materials; update regularly
- **Adhere to AFISRAI 14-153v1; generate Unit/CC RIP status report**
- **Encourage real-time reporting of RIP event/task experiences and integrity of reporting and auditing**
- **Coordinate with [redacted] "White Cell" RIP task improvement effort**

UNCLASSIFIED

Discussion

UNCLASSIFIED

Appendix B: Interview Protocol Guide

The primary location of interviews will be in the base education center classroom. If that location is inaccessible for any reason, the alternate location will be the base library meeting room. Interviews will be scheduled two weeks in advance and will have a backup interview day planned.

Interview start time:	Primary interview date:
Interview end time:	Alternate interview date:
Location:	Tentative follow-up interview date:

This interview will be semi-structured using the guiding questions numbered below. The interview will be audio recorded with the permission of the participant. If the participant wishes not to be recorded, responses will be annotated below after each question. Additional questions (i.e., probing questions) will be included on the back of this protocol guide with the number of the question that prompted deeper inquiry.

1. How would you describe what it means to be proficient?

2. How does the organization define proficiency?

3. Why is proficiency important for what you do here at your organization or in intelligence, surveillance, reconnaissance?

4. How would you describe the Ready Intelligence Program?

5. How does the Ready Intelligence Program help you to maintain proficiency?

6. How effective is the Ready Intelligence Program?

Appendix C: Observation Protocol Guide

Observations will occur where the participants experience the requirements of RIP. For example, crewmembers working live mission may experience RIP while on the operations floor, whereas the RIP manager experiences the requirements while sitting at their desk away from the operations floor. If the participant works live mission, I will arrive for observations by 6:30 a.m./p.m. on the days of observation, as pre-mission activities occur at these times and mission(s) begin at 7:00 a.m./p.m. If the participant is not a crewmember working live mission, observations will be prescheduled.

Observation start time:	Observation date:
Observation end time:	Participant(s) ID:

Location/Activity (indicate one by circling):

Ops floor w/ live missions	Ops Floor/Office w/ simulated events	Backshop/office w/ RIP mgmt.
• Pre-mission activities (e.g., checking currency, simulated training tasks, checking other crewmembers currency, etc.) • Working mission analyzing tgts • Completing any RIP tasks • Post-msn activities (reporting)	• Locating RIP training resources • Completing simulation of tasks • Reporting completed tasks	• Updating RIP tasks (new materials) • Auditing RIP currency • Generating RIP tasks reports for Unit/CC • Managing members' completion of RIP tasks

The observations will be used to determine resource availability and use and how activities associated with RIP are performed by crewmembers in the organization. The following space will be used to capture observations regarding RIP.

Program resources – How do the participants use the RIP resources available to them?

Program activities – What activities exist and how are they performed by the participant?

Intended outcomes – How well are intended outcomes emulated because of program resources and activities?

Use the form on the reverse of the observational protocol guide for descriptive and reflective notes.

Descriptive notes	Reflective notes

Appendix B: RIP Task Definitions

Training Event	Definition
AF DCGS Mission	Conduct ISR activity that includes collection, processing, exploitation and/or dissemination (CPED).
AF DCGS Mission Instructor	Train a crewmember on positional tasks.
Internal/External Ad Hoc to include time sensitive targets	De-conflict tasking and capacity issues; coordinate with internal/external elements, ensure successful completion of Ad hoc requirements.
Target/dynamic re-tasking	De-conflict tasking and capacity issues; coordinate with internal/external elements to re-task previously unsatisfied EEIs.
Cross-Cue events	Coordinate with at least one ISR asset for collection.
Mission Plan Modification	Adjust planned route to optimize collection.
SIGINT Reporting	Identify reportable activity; draft, and/or QC, disseminate appropriate reports IAW established procedures.
IMINT Reporting	Identify reportable activity; create, edit, and/or QC, disseminate products IAW established procedures.
Multi-INT Reporting	Draft report from multiple intelligence sources.
Search and Acquisition	Set, display, modify and manipulate automatic and/or manual search and acquisition assignments and collection.
CRITIC Event	Recognize activity meeting CRITIC criteria and execute established procedures.
Troops in Contact (TIC)	Support TIC activity; coordinate with internal and external elements IAW established procedures.
Personnel Recovery (PR) /CSAR event	Support PR events; coordinate with internal and external organizations and execute established

NOTE: Table modified from AFI 14-153, volume 1 (Air Force ISR Agency, 2013b)

Appendix C: General and Mission Evaluation Requirements (GA and IMS)

Area/Title	GA	IMS
1. Communications Systems	R	R
2. Mission Preparation		
2.1. Go/No-Go [1]	R	R
2.2. Pre-Mission Duties	R	R
3. Mission Execution	R	R
4. Crew Coordination	R	R
5. Post Mission Activities	R	R
6. Mission Handoff	R	R
7. Emergency/Safety Procedures [1]	R	R
8. Security [1]	R	R
9. Threat Warning [1]	R	R
10. Graphics Functions	R	R
11. Collection Minimization [1]	R	R
15. Intelligence Products	R	R
18. Mission Tasking	R	R
19. External Coordination		R
20. Product Management		R
22. Mission Management		R
23. Sensor Cross-Cue		R
24. Collection Planning		R
25. Pre-Mission Briefing (PMB)		R
26. Personnel Recovery [1]	R	R
27. Post-Mission Debrief		R

Note. [1] denotes critical areas. “R” denotes required areas to be evaluated during a mission evaluation. Table modified from AFI 14-153, volume 2 (Air Force ISR Agency, 2013a).

Appendix D: Air Force IRB Approval

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

MEMORANDUM FOR [redacted] CC (COL [redacted]) 19 MAR 2014

FROM: 711 HPW/IR
2245 Monahan Way, Bldg. 29, Rm 202B
Wright-Patterson AFB, OH 45433

SUBJECT: Air Force Protocol Number: **FWR20140066X**
Protocol Title: **Perception of Crewmember Proficiency within the Air Force Distributed Common Ground System: A Qualitative Study**
Principal Investigator: **James Bane**

1. In accordance with HRPO/EDO review requirements per DoD Instruction (DoDI) 3216.02, "Protection of Human Subjects and Adherence to Ethical Standards in DoD-supported Research" and 32 CFR 219 the HRPO/EDO has reviewed the activity noted above and determined it does not meet the definition of human subject research for the following reasons:

   Per 3216.02, activities conducted or supported by the Department of Defense that are not research involving human subjects includes:

   "Activities, including program evaluation, customer satisfaction surveys, user surveys, outcome reviews, and other methods, designed solely to assess the performance of DoD programs where the results of the evaluation are only for the use of Government officials responsible for the operation or oversight of the program being evaluated and are not intended for generalized use beyond such program" .

   Based on the information provided, it does not appear that this activity meets the definition of research per 32 CFR219.102 (d) and does not fall under the purview of the IRB.

2. Please contact my office to discuss any substantive change to this activity prior to implementation to ensure it does not impact the determination herein or compliance with the references noted in item 1 above.

3. If there are any questions about this determination, please contact me via phone: Direct (937) 656-5468/DSN 986-546 or via email: sherrie.pryber@us.af.mil.

Sherrie L. Pryber

Sherrie L. Pryber, B.S.N., M.S.
Human Research Protection Official

Cc JAMES BANE

Appendix E: Supplemental Evaluation and Data Use Agreement Memorandums

DEPARTMENT OF THE AIR FORCE
[redacted] INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE [redacted]

7 February 2014

MEMORANDUM FOR RECORD

FROM: [redacted]/OGV

SUBJECT: Supplementary Evaluation

1. The [redacted]/CC has directed [redacted] Stan/Eval to conduct a supplementary evaluation on the Ready Intelligence Program (RIP) to determine its effectiveness. Since its implementation in 2010, no program evaluation has been conducted on RIP, prompting this supplementary evaluation.

2. The supplementary evaluation data collection will commence between 3 March 2014 and 31 May 2014 IAW procedures established in the supplementary evaluation proposal. The principal evaluator will be SSgt James M. Bane.

3. The primary objective of this evaluation is to determine how crewmember perception of proficiency is affected by completion of RIP tasks, therefore, revealing RIP effectiveness. The evaluation results may be used to inform continuation training policy within DCGS as well as aid in the development of a DCGS Weapon System Trainer.

4. Following the completion of the evaluation, results will be presented during the next Standardization/Evaluations Board (SEB) and documented in the SEB minutes. Formative reports will be used if breaches in safety or security occur. Additionally, bi-weekly updates will be provided to the [redacted]/CC.

5. Please contact me at DSN [redacted] if you have any questions.

[redacted] Capt, USAF
Chief, Standardization and Evaluations

DEPARTMENT OF THE AIR FORCE
[redacted] INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE [redacted]

12 February 2014

MEMORANDUM FOR RECORD

FROM: [redacted]/CC

SUBJECT: Data Use Agreement for Program Evaluation on Ready Intelligence Program (RIP)

1. A program evaluation will be conducted on the RIP where the data collection period extends from 3 March 2014 through 31 May 2014.

2. Data documents collected regarding RIP will be restricted to assisting in the determination of the effectiveness of the program and may be used and/or disclosed for this program evaluation only. The evaluator will ensure that any data classified beyond unclassified or regarded as Personally Identifiable Information (PII) will remain safeguarded IAW Department of Defense procedures and the Privacy Act of 1974. All participants and unit designators will be confidential during the evaluation and anonymized for final reporting to protect their identities and credibility. Any inadvertent disclosure of PII will be immediately reported IAW federal regulations.

3. The supplementary evaluation will be used by SSgt James M. Bane in partial fulfillment of the degree requirements for Doctor of Education from Walden University. This data use agreement is contingent upon approval from Walden University Institutional Review Board and the Air Force Institutional Review Board.

4. Please direct all concerns regarding the program evaluation, to include evaluation design, data collection and analysis, and protection of the participants involved to SSgt James M. Bane by phone at DSN: [redacted] or 609-774-1193 or by emailing james.bane@waldenu.edu. All other concerns regarding authorization to use collected data can be directed to the [redacted] Chief of Standardization and Evaluation by calling DSN: [redacted].

[redacted], Col, USAF
Commander

Appendix F: Participant E-mail

From: james.bane.6@us.af.mil

To: [participant_email_address]

Subject: Research Participation Invitation: Ready Intelligence Program Evaluation

Dear [participant_name],

I would like to invite you to participate in a study evaluating the Ready Intelligence Program (RIP). The study is titled, Perception of Crewmember Proficiency within the Air Force Distributed Common Ground System: A Qualitative Program Evaluation.

The purpose of this study is to conduct a program evaluation on RIP and determine how the program effects crewmembers' perception of proficiency of their qualification(s). I believe you can help my research and the program evaluation by sharing what you know about the program and your perception of proficiency.

You were selected for the study based on your known qualifications, currency, and your role in RIP. Your confidentiality is important and your responses will remain confidential should you decide to participate. If you choose to not participate in this program evaluation, you may do so at any time.

If you are interested in helping conduct a program evaluation on RIP and understanding how RIP is effecting proficiency, please respond to this e-mail expressing your interest and I will coordinate a time where we will meet to discuss the program evaluation procedures (i.e., interview, observation, and member-checking of data), benefits, and answer any questions you may have.

Sincerely,
James Bane

Appendix G: Interview Protocol Guide

The primary location of interviews will be in the base education center classroom. If that location is inaccessible for any reason, the alternate location will be the base library meeting room. Interviews will be scheduled two weeks in advance and will have a backup interview day planned.

Interview start time:	Primary interview date:
Interview end time:	Alternate interview date:
Location:	Tentative follow-up interview date:

This interview will be semi-structured using the guiding questions numbered below. The interview will be audio recorded with the permission of the participant. If the participant wishes not to be recorded, responses will be annotated below after each question. Additional questions (i.e., probing questions) will be included on the back of this protocol guide with the number of the question that prompted deeper inquiry.

1. How would you describe what it means to be proficient?

2. How does the organization define proficiency?

3. Why is proficiency important for what you do here at your organization or in intelligence, surveillance, reconnaissance?

4. How would you describe the Ready Intelligence Program?

5. How does the Ready Intelligence Program help you to maintain proficiency?

6. How effective is the Ready Intelligence Program?

Appendix H: Observation Protocol

Observations will occur where the participants experience the requirements of RIP. For example, crewmembers working live mission may experience RIP while on the operations floor, whereas the RIP manager experiences the requirements while sitting at their desk away from the operations floor. If the participant works live mission, I will arrive for observations by 6:30 a.m./p.m. on the days of observation, as pre-mission activities occur at these times and mission(s) begin at 7:00 a.m./p.m. If the participant is not a crewmember working live mission, observations will be prescheduled.

Observation start time:	Observation date:
Observation end time:	Participant(s) ID:

Location/Activity (indicate one by circling):

Ops floor w/ live missions • Pre-mission activities (e.g., checking currency, simulated training tasks, checking other crewmembers currency, etc.) • Working mission analyzing tgts • Completing any RIP tasks • Post-msn activities (reporting)	Ops Floor/Office w/ simulated events • Locating RIP training resources • Completing simulation of tasks • Reporting completed tasks	Backshop/office w/ RIP mgmt. • Updating RIP tasks (new materials) • Auditing RIP currency • Generating RIP tasks reports for Unit/CC • Managing members' completion of RIP tasks

The observations will be used to determine resource availability and use and how activities associated with RIP are performed by crewmembers in the organization. The following space will be used to capture observations regarding RIP.

Program resources – How do the participants use the RIP resources available to them?

Program activities – What activities exist and how are they performed by the participant?

Intended outcomes – How well are intended outcomes emulated because of program resources and activities?

Use the form on the reverse of the observational protocol guide for descriptive and reflective notes.

Descriptive notes	Reflective notes

Appendix I: Logic Model

READY INTELLIGENCE PROGRAM (RIP) EVALUATION LOGIC MODEL

INPUTS	OUTPUTS		OUTCOMES	
	Activities	Participation	Short-term	Long-term
What we invest. What resources are available, put into RIP?	If all resources are provided, then activities may be developed/take place.	If activities are developed and in place, what participation takes place?	If participation takes place, what is the immediate/short-term outcome?	If the mid-term outcomes are met, what are the long-term, lasting outcomes to be?
Personnel Instructors Program manager Auditors Crewmembers **Materials/Tools** Training materials (.ppt) Tracking mechanism (PEX) **Facility/Equipment** Secure facility Computers	1) RIP task assignment 2) INSTR-led simulation 3) INSTR observation of N-BMC/CMR crewmember 4) Self-Review of Power Point slides (knowledge) 5) Simulate RIP events / tasks (performance) 6) Training Activity Reports for RIP events or tasks 7) Currency report provided to Unit/CC	1) Crewmembers approaching non-BMC/CMR status conduct self-review of PowerPoint slides 2) Crewmembers in non-BMC/CMR status undergo INSTR-led simulation training or sit mission witnessed by an INSTR 3) After a RIP event or task is experienced live or simulated, crewmembers submit Training Activity Reports in PEX 4) Auditor approves / validates TARs 5) Program manager generates monthly currency reports	1. Pre-mission requirements are met, members are "green" to sit mission. 2. Members remain or are brought into currency and are considered proficient at performing duties. 3. Members are aware of upcoming currency expiration 4. Members are reminded to sit mission and review critical checklists applicable to mission events	1. Members maintain personal accountability of own proficiency 2. MSN proficiency maintained via positional currency 3. Sustained MSN Readiness
Assumptions: • Secure facility with computer systems will be made available to units • Participation in RIP will occur as required; crewmembers understand procedures for completion of RIP tasks (live and simulated) and reporting Training Activity Reports • Training materials are up-to-date			External Factors: • Civilian employment in ISR field may improve readiness or understanding of certain events/tasks • Participation in professional development or pursuing formal education may enhance proficiency	

Appendix J: Use of Observation Protocol with Transcription and Coding into NVivo

Participant 5, E

Observation Protocol Guide

Observations will occur where the participants experience the requirements of RIP. For example, crewmembers working live mission may experience RIP while on the operations floor, whereas the RIP manager experiences the requirements while sitting at their desk away from the operations floor. If the participant works live mission, I will arrive for observations by 6:30 a.m./p.m. on the days of observation, as pre-mission activities occur at these times and mission(s) begin at 7:00 a.m./p.m. If the participant is not a crewmember working live mission, observations will be pre-scheduled.

Observation start time: 1330	Observation date: 6 May 2014
Observation end time: 1402	Participant(s) ID: Participant 5

Location/Activity (indicate one by circling):

Ops floor w/ live missions
- Pre-mission activities (e.g., checking currency, simulated training tasks, checking other crewmembers currency, etc.)
- Working mission analyzing tgts
- Completing any RIP tasks
- Post-msn activities (reporting)

Ops Floor/Office w/ simulated events
- Locating RIP training resources
- Completing simulation of tasks
- Reporting completed tasks

Backshop/office w/ RIP mgmt.
- Updating RIP tasks (new materials)
- Auditing RIP currency
- Generating RIP tasks reports for Unit/CC
- Managing members' completion of RIP tasks

manual at why
Automatically in Rex tough Rollup Report

The observations will be used to determine resource availability and use and how activities associated with RIP are performed by crewmembers in the organization. The following space will be used to capture observations regarding RIP.

Filterable

Program resources – How do the participants use the RIP resources available to them?

Tasks - updated by [redacted] Vig Shaygot SEPR
Slides - Xois my located on
• Rex great for tracking/Reports — Not very full feature.

Program activities – What activities exist and how are they performed by the participant?

Review tasks/checklist → Ins to observe Acty
Not really simulating → Instr Driven level of Sim

Intended outcomes – How well are intended outcomes emulated because of program resources and activities?

Must be done accurately

Use the form on the reverse of the observational protocol guide for descriptive and reflective notes.

* Tasks by 90 days not when events are accomplished

* Varying Accountability across Squadrons
Who is lead Activity — time is Confusion

Descriptive notes	Reflective notes
Assign RIP After Cncl Notification of Cncls Dropped →	Lot of time spent catchy up Frgt/ Assigning RIP tasks that haven't been Assgnd.
* RIP takes won't let you Report w/o Due date (Basic Permissions only) Audity When acty can be confirmed, I will Audit Recmnd others to Smeone who can validate it.	
Building tasks from 153v1	• inundated w/ tasks / tasks, e.g. RIP. ↓ More of an imposition
Generate Reports Confusg – Reports has details do what you'd think Reveal trainy takes Colorful depiction of Sent/Log Many of Emails Rec.	• Reports Hours to complete each task is Directly effected by accuracy of Resumpo.
~~Sent to CC~~ (Pct info Go/NoGo folder) not actually Sent out to Sd/cc.	MOEs are more important to be given than Reports.

Name: Participant 5 Observation Notes

The observation of participant 5 took place at his desk located away from the operations floor. The desks are cubicle style with deviders. There are about six rows of desk, five desks deep, with dividers between them.

I sat with the participant who logged onto his system and showed me how he manages RIP. The aspects of RIP that are managed at his level include auditing members' currency reporting via Patriot Excalibur (PEX), generating RIP tasks reports for public use, and managing members' completion of RIP tasks. As an additional responsibility, he was scrubbing every members' RIP data to ensure accuracy since there was a descrepancy as a result of procedures not being followed and RIP tasks not being assigned to over 40 individuals.

Participant 5 explained how he was more or less inundated with tasks such as RIP, which turn out to be more of an imposition.

Program Resources -- How do the participants use the RIP resources available to them?

When trying to observe how RIP tasks are updated, it was explained that tasks are updated at the Wing-level. This means that at this location, RIP tasks may only as current as their Wing or MAJCOM publishes. The implications of this are far-reaching considering there are 39 plus locations adhering to these tasks operating in different AORs with varying missions. We don't know if all sites are running the program in the same manner. There may be sites updating training materials to better suit their AOR, missions, or changing enemy TTPs.

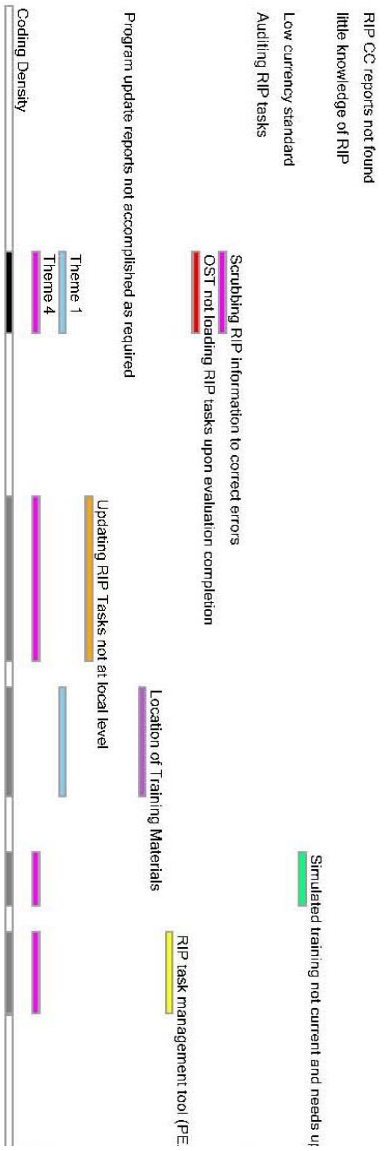
The location of the PowerPoint slides with which crewmembers review academic knowledge of task completion instructions and simulate tasks that are not frequently experienced were demonstrated to be on the Wing SharePoint site on their Secret Internet Protocol Router Network (SIPRNet).

The PowerPoint slides on the Wing SharePoint site were current as of May 2013. But this was the date they were updated. The acutal creation date of the PowerPoint training slides were July 2011.

Patriot Excalibur is their automated data tool for managing, tracking, reporting, periodicity/completion of RIP tasks. There are more aspects of the program that are not being used (e.g., the ability to count number of hours spent experiencing RIP tasks).

Program Activities – What activities exist and how are they performed by the participant?

RIP activities include:



crewmembers (e.g., auditing one's self or reporting RIP task completion without experience or simulating them)

--RIP manager will also audit tasks as long as he knows the activiy can be confirmed, otherwise he will deferr to someone who can validate it.

--generating a hard-copy report placed in a location where all crewmembers may read it if they choose (particularly intended for Mission Operations Commanders). Report generated IAW guidance, but guidance also directs to send to respective unit commanders, which is not being accomplished. Report is said to be placed in the Go/No-Go folder. --no report found and crewmembers are unaware of the report--

PEX continuation training report tab is confusing--"reporting tab doesn't do what you think." The report is actually a printout of a colorful training tab that depicts short and long wrnings of when individuals are coming due or overdue.

Since the the required reports are being generated but not placed directly in the possession of the unit commanders (with applicable briefing explaining the results), the commander has no way of knowing what needs to be enforced as far as corrections to the program management and compliance.

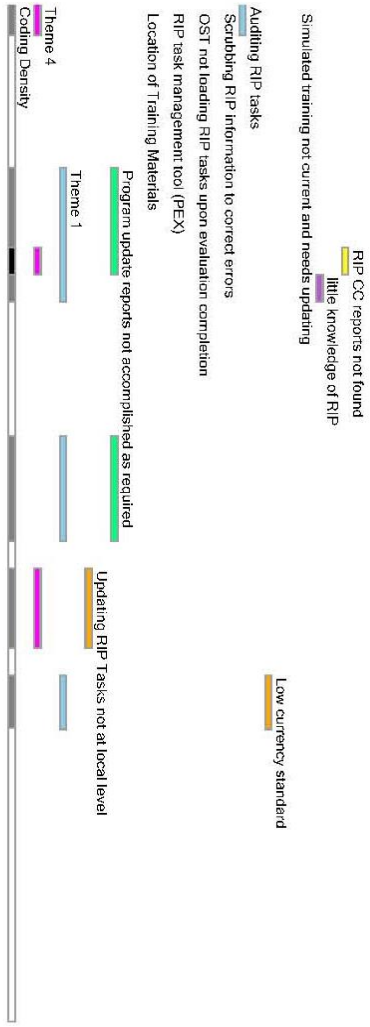
Updating tasks (for relevance or quality) is not done at the squadron level. Unit RIP program manager and crewmembers await updates from Wing level or higher (AF ISR Agency). The potential for using outdated material is very likely.

Tasks were observed to be reported once every 90 days (1/90) as opposed to as they are accomplished. The minimum requirement appears to be the norm (standard).

There is varying acountability accross squadrons at this site. With 7 units located at this DGS, each respective commander should be receiving a report for their members and holding their members accountable for completitng the RIP program requirements. Currently, RIP is being managed by one individual in one squadron (not at the group level).

Intended Outcomes

The challenge of oversight of 1000+ members by one RIP program manager and not knowing who has completed what suggests the outcomes intended by RIP are unknown.



Appendix K: Hypothetical Duration of RIP Training Material Access

Number of People	Minimum time (in minutes) to review training material	Approximate total hours of file access (one time)	Approximate total hours of file access (10 times)
100	2	3	30
	5	8	80
300	2	10	100
	5	25	250
500	2	17	170
	5	42	420
700	2	23	230
	5	58	580
900	2	30	300
	5	75	750

Appendix L: Sample Interview Transcript and Member Checking E-Mail

	Content – Participant 3	Codes
Me	So, how does RIP help you maintain proficiency?	
Participant 3	How to does it maintain it?	
Me	Right.	
Participant 3	Uh, just by, like I said, by getting a task list for an analyst, like, let's say for a geospatial analyst, to go through it and say that they can conduct x, y, and z, all the items that are you know, fallen under RIP program. Well, RIP program is like saying ATM machine.	Question 5; RIP helps maintain proficiency by completing task lists depending on your qualification
Me	You're right.	
Participant 3	Um, that fall under RIP, in a way to say, if you can conduct all of these items, then we are, that has what we have deemed as an enterprise to be, you know, the uh, all of the things, all of the parameters you need to define, or you need to prove in order to show proficiency in your given qualification. Does that answer your question? I feel like it's kind of the same...	Proficiency is completing the RIP tasks according to the organization
Me	It is a little bit of the same, so, is there anything in RIP, does RIP help you maintain, does RIP make your proficient.	
Participant 3	Yes and no.	
Me	Why yes and no?	
Participant 3	I feel like, to me, the RIP program, this is my opinion, It's not complete, it's not whole. It really hits on critical items. It hits on a given set of events but those given set of events have been you know, have been driven from a kind of a recent mission set that is forever, that is always changing, especially within our enterprise. And uh, I don't think that those critical items really define all of proficiency in a given qualification, there's a lot more tasks that are involved in conducting a given, well, we'll use GA as an example, there's a lot more tasks that are involved in a given, you know, in a given day, for, for a GA than what is contained in RIP tasks. So, it seems RIP is incomplete to me I feel like just simply conducting the critical items doesn't show proficiency. I feel like that shows your proficient on your critical items but not all of the tasks. So I, for me it's hard to consider proficiency when you're only, when you're only proving that on the critical items you're able to do that stuff. So I guess in a way, if you're looking at the RIP program as a way to establish proficiency then what we're essentially saying is that you are proficient on what, what critical items you're going to use but not necessarily the entire job, and that's where I would disagree. I see proficiency in a given qualification-every task you're going to do as a GA, if you're going to be proficient across the board then all of the things you need to do, not just the critical items, should be, I think, proven on an, I don't know, 90-day scale, or whatever arbitrary number we set as an enterprise decide to put on what we decide is you know, perfect.	RIP program is not complete RIP is driven by critical items Critical items to not cover entire crew position Conducting RIP tasks (critical items) does not show proficiency RIP shows proficiency in critical items, not qualification I see proficiency as every task you need to complete, not just critical items 1/90 is arbitrary

BANE, JAMES M TSgt USAF [redacted]

Subject: FW: Program Evaluation on RIP -- Member checking

-----Original Message-----
From: [redacted]
Sent: Friday, May 30, 2014 3:04 PM
To: BANE, JAMES M SSGT USAF [redacted]
Subject: RE: Program Evaluation on RIP -- Member checking

SSgt Bane,

I think that your findings are spot on, and I concur that you properly captured our interview (although reading through made me a bit embarrassed for how cloudy my mind really was...I am usually much more coherent and articulate than that!). Let me know if you need anything else, and I will be in touch periodically to discuss more on this RIP as we move forward I am sure!

v/r
[redacted] Civ, DAF
Operations Training Program Manager
[redacted]
Commercial ☎: [redacted]
DSN ☎: [redacted]
Cell ☎: [redacted]
WG DOT Sharepoint: https://intelshare.intelink.gov/sites[redacted]default.aspx

-----Original Message-----
From: BANE, JAMES M SSGT USAF [redacted]
Sent: Tuesday, May 27, 2014 3:35 PM
To: [redacted]
Subject: Program Evaluation on RIP -- Member checking

Mr.[redacted],

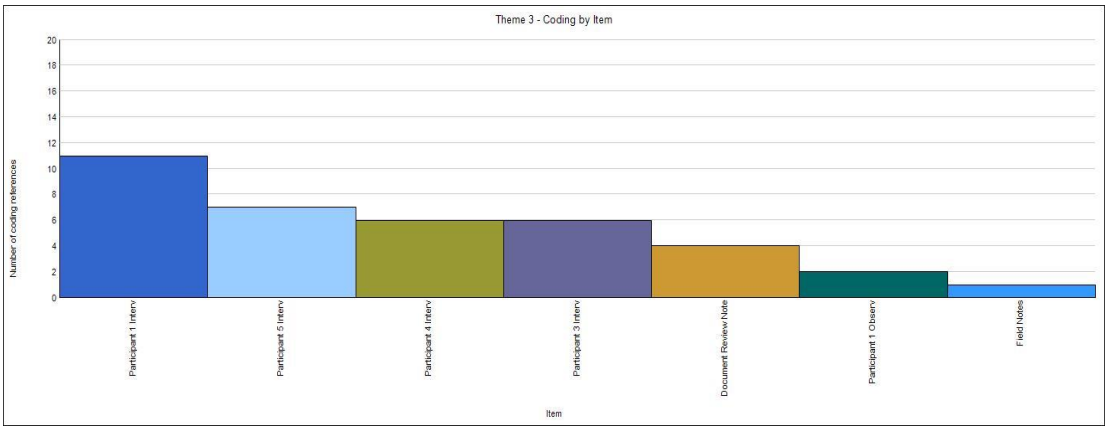
Good afternoon! I've transcribed the interviews, identified information that stands out, and developed overarching categories from all five interview participants. Can you take a moment to review the transcript to make sure you concur with how it was transcribed (that I've captured your answers correctly and the data is accurate)? This process is called member checking, which is intended to ensure validity/reliability in a qualitative study--to make sure the program evaluators are accurate in their interpretations.

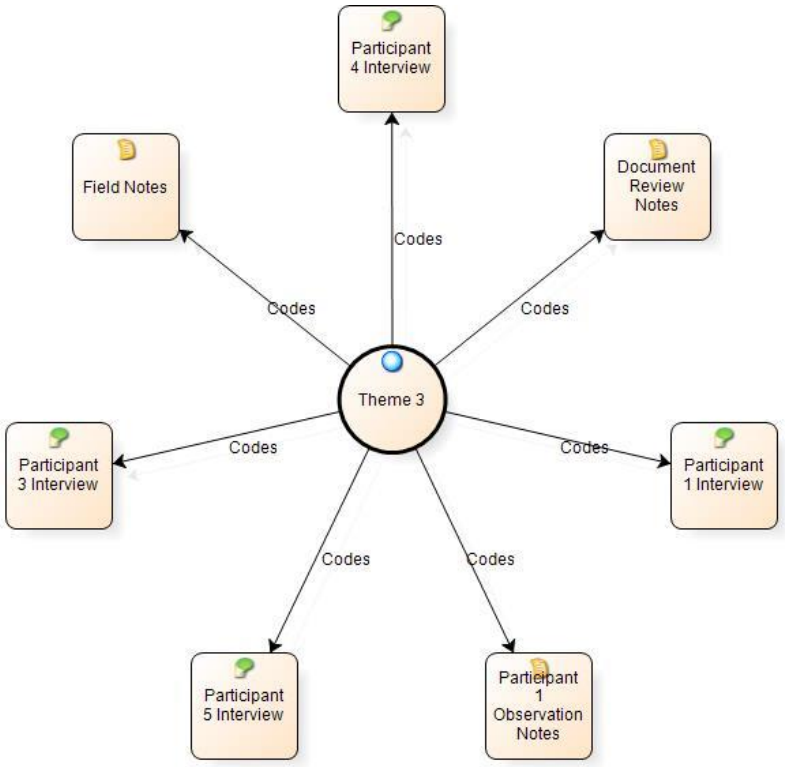
Also, if you would, please review the attached document titled Initial Themes.docx. The overarching themes are identified in bold and are numbered; supporting ideas are below the themes. Overarching themes were derived from cross-referencing all five participants' responses--the supporting ideas are not from only your responses, but are a reflection of all of the participants' responses. Let me know if you agree or disagree with anything you read in the attached documents.

Thank you for your time and help with this evaluation!

V/R,
SSgt Bane

Appendix M: Use of NVivo 10 to Chart/Graph Codes for Triangulation Validation





Appendix N: External Evaluator Review

Gmail by Google

James Bane <james.bane@waldenu.edu>

External Evaluator's Review

1 message

Thomisha M Duru-Nnebue <durutm@pgcc.edu> Tue, Jul 29, 2014 at 10:22 PM
To: James Bane <james.bane@waldenu.edu>

FROM: Dr. Thomisha M. Duru

Independent Evaluator

TO: James M. Bane, Intelligence Operations Specialist

Virginia Air National Guard

DATE: July 29, 2014

SUBJECT: Review of the Distributed Common Ground System (DCGS) Ready Intelligence Program (RIP) Evaluation

This project addresses the issue of a proficiency maintenance program being used with no program evaluation to determine if the program outcome of proficiency is being met. This student conducted a program evaluation with the Logic Model as its theoretical foundation to determine the state of the program (resources, activities, and outputs) and conducted interviews, observations, and document reviews as the data collection methods. The four themes derived from data collection accurately represent the participants' views of the state of the program. Data were found in the interview transcriptions, observation notes, and document review notes to corroborate the findings from which the overarching themes were developed.

The methodology chosen to conduct the program evaluation was effective considering the research question addressing the problem. The purposeful sampling technique, using a maximum variation strategy, was an effective method to gain multiple perspectives from within the organization being evaluated. Qualitative data collection methods (interviews, observations, and document reviews) obtained data relevant to the guiding question and addressed perceptions of proficiency as it relates to the program.

Overall, the reported findings represent the perceptions of the participants truthfully and appear to accurately portray the current state of the program implemented at this site. One discrepant item existed between the data collected and the findings reported. The finding reported that "RIP and positional evaluations are bare minimum to attain and maintain proficiency with regard to SIGINT positions" was not supported through triangulation. This finding appears to portray one participant's perception and no data was found from observations or document reviews to support the finding.

Sincerely,

Thomisha M. Duru (e-signature)

Dr. Thomisha M. Duru

Independent Evaluator

durutm@pgcc.edu

Curriculum Vitae

James M. Bane, III
bane.james.m@gmail.com

Education

Walden University, Minneapolis, MN
Ed.D. in Higher Education and Adult Learning, April 2015

TUI University, Cypress, CA
M.A.Ed. in Teaching and Instruction, 2010

Clarion University, Clarion, PA
B.S. in Communication

Community College of the Air Force, Maxwell AFB, Gunter Annex, Alabama
A.A.S. in Communication Application and Technology

Principal Research Interests

- *Adult proficiency*—establishing standards and measurements and understanding multi-perspective views of proficiency (i.e., the learner, instructor, employer, etc.)

- *Purposeful education*—engaging adults through purpose, meaning, and immediate application of learned knowledge/skill/attitudes

- *Technology for education*—exploring the transition to and effects of hybrid/blended learning (traditional classrooms with online learning) in higher education

- *Simulation technology in military education*—using simulation for initial and continuing education to enhance proficiency in military applications

Principal Teaching Interests

- *College learning skills for academic success* – Successful transition to in-residence/online college learning: academic planning, workload management, college composition, research techniques, critical thinking, and career expectations.

- *Technology and learning* – Ethics, current issues, and infusion into classroom

- *Computers and Information Science* – Computer applications: Microsoft Word, Excel, PowerPoint, Access, Outlook, and OneNote

Teaching Experience

My primary teaching experience is with adult learners in a military setting. Specifically, I have taught instructional and evaluative skills, full motion video imagery screener/tactical communicator techniques, geospatial analysis techniques, Heartsaver CPR, and computer applications to include Microsoft Word, Excel, PowerPoint, Access, Outlook, and OneNote; Adobe software including Acrobat, Photoshop, and Premiere Pro; Socket GXP Imagery Analysis Suite.

Professional Experience

2011-Present, Intelligence Operations Specialist
[redacted]

Major duties include (1) acting as a functional area instructor and evaluator and training intelligence personnel during peacetime and contingency operations, (2) working with crews to ensure the imagery exploitation cell maintains capabilities and providing timely and accurate operational intelligence support, (3) enhancing the Distributed Ground Station crews' mission readiness, maintaining a thorough knowledge of all aspects of internal imagery training, (4) representing the unit in making agreements and commitments within the assigned scope of the imagery intelligence specialty, (5) providing guidance and assistance to unit and command intelligence specialists and coordinating projects for the unit, command, and external organizations, (6) identifying issues and producing work schedules to effectively train assigned personnel, and (7) managing resources and improving processes.

2010-Present, Geospatial Analyst, Instructor and Evaluator
[redacted]

Major duties include training, organizing, equipping, and evaluating Virginia ANG members for federal missions. I ensure compliance and the intent of Ready Intelligence Program for crewmember proficiency is met through the organization of federal mission training events and develop/deliver continuation training plans to intelligence crewmembers in accordance with Distributed Common Ground System requirements. I am responsible for subordinate Airmen and conduct performance feedbacks ensuring expectations management. During my time with the unit, I assisted with driving the development of the 192d IS Incident, Awareness, and Assessment (IAA) structure and training as well as produced and delivered briefings and reports for senior-level military and civilian officials.

2006-2010, Geospatial Analyst, Instructor and Evaluator
30th Intelligence Squadron / 497th Intelligence Group, Langley AFB, VA

I taught Geospatial Analysis techniques and procedures to active duty and reserve component members in addition to providing intelligence analysis of still, full-motion, and multi-spectral imagery. I also served as a Heartsaver CPR Instructor while on active duty, instructing 50+ adult military and civilian members.

2005-2006, Substitute Teacher
Source4Teachers, Cherry Hill, NJ

I maintained control of classroom environments with up to 35 students at a time, keeping them on task for the duration of the class period. I guided students through required activities to prevent gaps in learning and maintained a worthwhile educative experience.

2004-2005, Teaching Assistant
Clarion University, Clarion, PA

I provided support to faculty by acting as the liaison between students and professors, organizing class materials, and maintaining students' grades and assignments, exams, and attendance.

2002-2005, Multimedia Lab Technician
Clarion University, Clarion, PA

I worked as a multimedia lab technician and instructed individuals on techniques and skills required to utilize the software (e.g. Adobe Photoshop, Premier Professional, Microsoft Office, etc.) essential to accomplishing various assignments. I also managed the lab during operating hours, maintained equipment, and corrected hardware/software issues that arose.

Memberships

American Association for Adult and Continuing Education

American Evaluation Association