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COUNTER INSIDER THREAT EDUCATION IN THE USAF COMMAND-LEVEL SCHOOLHOUSES

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By: **Malcom J. Asher**
Jacob M. Cross
Geer P. McGee

Advisor: **Paul Lester**
Second Reader: **Erik Helzer**

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Malcom J. Asher, Master Sergeant, United States Air Force
Jacob M. Cross, Captain, United States Air Force
Geer P. McGee, Captain, United States Air Force

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Approved by: Paul Lester
Advisor

Erik Helzer
Second Reader

Rene G. Rendon
Academic Associate, Department of Defense Management

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LIST OF ACRONYMS AND ABBREVIATIONS

ACSC	Air Command and Staff College
AETC	Air Education and Training Command
AFI	Air Force Instruction
CBT	Computer-Based Training
CDSE	Center for Development of Security Excellence
CInT	Counter Insider Threat
CJCS	Chairmen of the Joint Chiefs of Staff
DITMAC	Defense Insider Threat Management and Analysis Center
DNI	Director of National Intelligence
DOD	Department of Defense
DSB	Defense Science Board
DSS	Defense Security Service
EO	Executive Order
FBI	Federal Bureau of Investigation
IT	Information Technology
NDAA	National Defense Authorization Act
NITTF	National Insider Threat Task Force
PERSEREC	Defense Personnel and Security Research Center
PME	Professional Military Education
SAF/AAZ	Office of the Secretary of the Air Force Department for Security and Investigative Programs, Special Program Oversight, and Information Protection
SecDef	Secretary of Defense
SNCO	Senior Noncommissioned Officer
SNCOA	Senior Noncommissioned Officer Academy
TMU	Target Management Units
USAF	Unites States Air Force
USD(I)	Under Secretary of Defense for Intelligence

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I. INTRODUCTION

The Department of Defense (DOD) defines insider threat in its Directive 5205.16 (2017, p. 16) as "the threat insiders may pose to … Government installations, facilities, personnel, missions, or resources [to] include damage… through espionage, terrorism, unauthorized disclosure of national security information, or through the loss or degradation of departmental resources or capabilities." While the Under Secretary of Defense for Intelligence (USD(I)) maintains a department-wide Counter Insider Threat (CInT) program in response to this threat, each DOD component is similarly charged with maintaining their own. In response to this duty, the Unites States Air Force (USAF) governs its CInT program via Air Force Instruction (AFI) 16–1402, "Counter-Insider Threat Program Management," which provides a framework for detection, deterrence, and mitigation of insider threats. The publication also issues guidance for the development, implementation, and management of CInT training and awareness measures. Specifically, AFI 16–1402 requires commanders and supervisors to receive training on identifying, reporting, and mitigating insider threat (Office of the Secretary of the Air Force [SAF], 2020).

One month after rioters stormed the U.S. Capitol, Secretary of Defense (SecDef) Lloyd J. Austin ordered a total force stand down to address extremism within the DOD. On April 9, 2021, he issued a memorandum (Austin, 2021) that directed four immediate actions: (1) the updating of military instruction terminology, (2) the strengthening of safeguards for retiring members, (3) the updating of screening questionnaires for applicants, and (4) the commissioning of a study into extremism. He also ordered four lines of effort to be started, so titled: (1) Military Justice, (2) Support and Oversight of Insider Threat Program, (3) Screening Capability, and (4) Education and Training. Line of effort four solicited recommendations for updating existing CInT training in order to address different leadership levels and separate, discrete target audiences; it is in response to this line of effort that the authors intend this study (Austin, 2021).

With a focus on the educational response to insider threat incidents, the authors devised a primary and secondary research question. First: how does the USAF educate its command-level personnel with CInT curriculum? A review of evolving federal, DOD, and

USAF policies indicated that leaders—specifically, commanders and supervisors—are the primary audience for CInT education. Within the USAF, there are two military educational institutions that prepare emerging command-level personnel for greater responsibility and thus are likely candidates for hosting CInT education, specifically the Air Command and Staff College (ACSC) and the Air Force Senior Noncommissioned Officer Academy (SNCOA). This led the authors to the second research question: to what degree are the educational policies and procedures at these institutions adequate for educating emerging command-level personnel on a topic as complex as CInT?

To address both questions, the authors intend to compare benchmark standards for adult education derived from the theoretical and empirical education literature to the standards employed at ACSC and SNCOA. Based on this benchmark comparison, the authors are able answer the research questions and make recommendations related to integrating CInT education into ACSC and SNCOA.

Note: commanders and supervisors can be of different ranks, their denotations being positional, though they are, most commonly, Field Grade Officers (FGO, i.e., Majors, Lieutenant Colonels, and Colonels) and SNCOs (i.e., Master Sergeants, Senior Master Sergeants, and Chief Master Sergeants), respectively. The title of commander can refer to the commander of a flight, a detachment, a squadron, a group, a wing, or a base but always refers to a person charged with G-series orders. Similarly, the title of supervisor can include direct supervisors, shift supervisors, section supervisors, program supervisors, or any other supervisory position, though no specific order distinguishes them. For clarity, the authors intend "commanders" to refer to squadron-level commanders of FGO rank, and "supervisors" to refer to squadron-level supervisors of SNCO rank. When combined, the authors refer to these two groups as "command-level personnel."

A. BACKGROUND

Insider threat is a risk innate to all organizations, for trust (i.e., the willingness of one to be vulnerable to others [Sweeney et al., 2001]) begs betrayal. History is littered with the deeds of traitors, whose stories linger in infamy (Gelles, 2016): parables of this ilk exist in the ancient stories of the Bible (e.g., the betrayal of Abel by Cain, of Christ by Judas,

etc.) and in contemporary American history books (e.g., Benedict Arnold, defector and informant). Recently, corporate insiders sought to steal, destroy, or manipulate personal user data (e.g., the malicious takeover of Facebook accounts, Google data breaches, etc.). Indeed, one 2019 insider threat report showed that 65% of corporate organizations have experienced an insider attack within the last year (Cybersecurity Insiders, 2019). But the threat is not unknown to the public sector either (e.g., Julian Assange and Bradley Manning, whose leaks of national security information were as extensive as the subsequent documentation on them). Regardless of its varied manifestations throughout time, insider threat is an eternal problem unlikely to subside.

Before the coining of "insider threat," the DOD referred to threats posed by members within the organization by another name: espionage. Spies, who conducted espionage missions, were the DOD's archetypical traitor by policy throughout the Cold War, during which time U.S. and Soviet Union spying was rampant. One spy, U.S. Navy cryptographic radioman John Walker, supplied information to the Soviets for over 17 years in secret while outwardly serving the U.S. His actions were the catalyst for the creation of the Defense Personnel and Security Research Center (PERSEREC) in 1986 (Ramey, 2020).

In the current era of strategic competition, foreign powers again seek to exploit America through espionage. China and Russia, among others, have targeted America's personnel in its military, industry, and academia with widespread recruiting tactics. The Federal Bureau of Investigation (FBI) reported opening a new case of Chinese espionage every 10 hours in 2020 and reports that the total number of cases rose by 1,300% over the past decade (Wray, 2020). Meanwhile, Russian disinformation campaigns stoke discord and spread extremist views online: the QAnon conspiracy group, which the FBI has deemed a domestic terrorist threat since 2019, is one consequence of Russian influence that is linked to multiple violent incidents in the U.S. (Suber & Ware, 2021). While corporate espionage and individual radicalization is ubiquitous, U.S. efforts to counter these tactics have surged. For example, the 2021 National Defense Authorization Act (NDAA) directs the Director of National Intelligence (DNI) to develop a report outlining how Russia has been supporting racially and ethnically motivated extremist groups. A version of the NDAA that passed through only the House of Representatives included language that

mandated a federal database of extremist groups and a new government wide counter terrorism commission, but these provisions did not make it onto the final bill (Stransky, 2021).

While espionage was the focus of the DOD's and PERSEREC's research for decades, an evolving understanding of insider threat linked to a new digital age and the rise of strategic power competition broadened that focus to a new definition of insider threat in 2011. With President Obama's signing of Executive Order (EO) 13587, the establishment of dedicated insider threat programs in all federal departments and agencies became mandatory. Issued in response to classified data leaks (most notably, those perpetrated by ex-Army intelligence analyst Bradley Manning in 2010), the EO was an effort to protect classified information (EO No. 13587, 2011). Consequently, the DOD's archetypical traitor evolved from spies to anyone with access to classified data, and chiefly, to anyone working in Information Technology (IT) services. Although the EO left the official definition of "insider threat" open to interpretation, the language of the order thoroughly conveys the focus on IT. For example, EO 13587 (2011, p. 1-3) states that "heads of agencies that operate or access classified computer networks shall… implement an insider threat detection and prevention program consistent with guidance and standards" and that "an interagency Insider Threat Task Force… shall develop a Government-wide program for… safeguarding… classified information from exploitation, compromise, or other unauthorized disclosure." EO 1357 (2011) did not directly reference or imply association to workplace violence, terrorism, or extremism.

When the National Insider Threat Task Force (NITTF), the interagency task force conscripted in response to EO 1357, developed its National Insider Threat Policy and Minimum Standards for Executive Branch Insider Threat Programs in 2012, the definition of insider threat expanded from IT and classified information to include acts of terrorism and "loss or degradation of departmental resources or capabilities" (NITTF, 2012, p. 5). Implicit to that definition is the need to secure federal organizations from workplace violence and extremism, although this was not explicitly addressed in policy.

Countering insider threat is naturally reactive: as new varieties of threats emerge, so too will definitions, policies, and counter measures diversify. However it is specified, the ultimate threat remains betrayal.

B. WORKPLACE VIOLENCE

While the NITTF accounted for terrorism in its 2012 definition of insider threat, DOD CInT policy and curriculum has been slow to place terrorism and workplace violence alongside information security and espionage as manifestations of insider threat. In fact, it is rarely the case that acts of terrorism or workplace violence receive the label of *insider threat*. One such example gained mainstream attention in 2009 when U.S. Army Major Nidal Hasan opened fire at the Soldier Readiness Center at Fort Hood, Texas, killing thirteen soldiers and injuring forty-three (Aradau & Blanke, 2017). Multiple threat definitions could describe Hasan's actions; indeed, the DOD, FBI, and U.S. Senate debated whether his actions were of terrorism, violent Islamic extremism, workplace violence, or some combination of the three (Baker, 2012). Such debate exposed a level of confusion in policy as the SecDef confirmed through a series of directed reviews: namely, the Fort Hood Review Board and the Defense Science Board (DSB) Task Force on Predicting Violent Behavior.

In its findings, the Fort Hood Review Board specifically addressed the DOD's lack of comprehensive guidance on workplace violence; the board recommended that the DOD "revise its policies and procedures to address the prevention and response to workplace violence incidents" (DODIG, 2015, p. 1). Although the perpetrator was an insider, the board referred to Hasan not as an insider threat but as a terrorist; this imprecise characterization hints at the evolving definition of insider threat (terrorism was later incorporated into the NTFF's definition in 2012). The Fort Hood Review Board also recommended that the DOD update its training and education programs. Specifically, the board called for (1) DOD personnel to be well equipped to identify the situational and behavioral indicators of potentially violent actors, (2) for the DOD to develop an assessment tool for at-risk personnel exhibiting indicators, and (3) for the DOD to, "integrate existing programs such as suicide, sexual assault, and family violence prevention

with information on violence and self-radicalization to provide a comprehensive prevention and response program" (DODIG, 2015, p. 28). The DSB echoed these recommendations in its report: chiefly, it recommended that SecDef integrate "related efforts including suicide prevention, impulsive violence, sexual harassment, early warning signs of Post-Traumatic Stress Disorder, and coping with medical or financial stress" (DODIG, 2015, p. 31) as a means of preventing violent behavior through consolidated education.

Workplace violence regained mainstream attention in 2013 with the Washington Navy Yard shooting. Aaron Alexis, a civilian contractor and former sailor, opened fire at the Naval Sea Systems Command, killing twelve people before an emergency response team killed him. An Internal Review of the shooting found that Aaron Alexis's behavioral history displayed a pattern that would have prompted an investigation (thus possibly preventing the incident) had it been observed and reported appropriately. However, his behavior manifested in different offices at several agencies, and managers never connected the isolated events as a pattern worthy of caution. This revelation led to the creation of the Defense Insider Threat Management and Analysis Center (DITMAC) in 2014, the purpose of which is to coordinate insider threat reporting across the DOD. While each department and agency remains responsible for its own CInT program, DITMAC is the center that binds reporting and applies predictive analysis at the level of the individual (Under Secretary of Defense for Intelligence, 2013). Even with this inter-departmental capability created to analyze potential insider threats, there is still a void in educating the workforce on what those threats might be. This void grows only more substantial as the definition of insider threat expands faster than the scope of educational policy.

C. EXTREMISM

Concerns about workplace violence and terrorism reappeared in 2021 when a disproportionate amount of active-duty and retired service members took part in the January 6th Capitol Hill riot. The presence of and active participation by military personnel (primarily National Guardsmen, Reservists, and veterans) illustrated the destructive element of insider threat as well as its insidious and corrosive effect on the public's view

of the military. Sedition is especially contemptable, but when those who swore to protect and defend the Constitution betray their oaths, the impact to national trust (and therefore also to national security) is far more caustic. A national defense survey that the Reagan Foundation conducted a month after the riot revealed that "the number of Americans who say they have a great deal of trust and confidence in the military has fallen by 14 percentage points (from 70% to 56%) since 2018" (Ronald Reagan Presidential Foundation and Institute, 2021, p. 2). This study is no doubt influenced by the events and news coverage of the Capitol Hill riots just a month prior.

What is equally alarming to consider is that the DOD, despite its myriad policies, programs, and centers dedicated to countering insider threats, including its well-publicized reiterations of restrictions on public demonstrations preceding the riot (e.g., 5 USC 7321–7326, 5CFR 733, 5 CFR 734, etc.), could not prevent its own personnel from taking harmful action against the nation. The Capitol Hill riot underscores the growing incidents of military members and veterans perpetrating insider attacks around the country. As the Center for Strategic Studies & International Studies April report, titled *The Military, Police, and the Rise of Terrorism in the United States*, outlined:

> The percentage of attacks and plots committed by active-duty and reserve personnel rose in 2020 to 6.4 percent of all attacks and plots (7 of 110 total), up from 1.5 percent in 2019 (1 of 65 total) and none in 2018. Active-duty personnel perpetrated 4.5 percent of the attacks in 2020 (five incidents), and reservists conducted 1.8 percent (two incidents). (Jones et al., 2021, p. 2)

Rising concerns of extremism in the force compelled SecDef Lloyd Austin to direct (1) a department-wide stand down day to address extremism, (2) foundation of the department-wide Countering Extremism Working Group, and (3) creation of long-term policy actions to counter extremism in the ranks. (Austin, 2021).

Extremist groups commonly recruit military members, both active and veteran, due to their unique skills. In a report to Congress on initial military screening, PERSEREC outlined that, "domestic extremist/terror groups (a) actively attempt to recruit military personnel into their group or cause, (b) encourage their members to join the military, or (c) join, themselves, for the purpose of acquiring combat and tactical experience," and that "military members are highly prized by these groups as they bring legitimacy to their

causes and enhance their ability to carry out attacks" (Rose et al., 2020, p. 6). Many extremist groups mascaraed under the guise of militias, and the *New York Times* estimates (without disclosing their source) that "veterans and active-duty members of the military currently make up roughly 25 percent of active militia members" (Steinhauer, 2020). Not all militias are extremists, necessarily, but many- like those at the Capitol riots- are. Those extremist groups attract military members by twisting the idea of service to the country and patriotism. Some groups even bastardize the oath of enlistment and the oath of office to attract members and justify their activities. Groups such as the Oath Keepers claim large membership rosters that include active-duty military members and law enforcement (McQueen, 2021). By appealing to recruits' patriotism these groups pervert that sentiment into contemptuous actions such as the Capitol Hill riot. CInT curricula has not included extremism, historically, but has begun to do so recently since SecDef Austin's April 9th, 2021 memorandum, in which he addressed extremism concerns alongside counter insider threat.

D. TRAINING AND EDUCATION REQUIREMENTS

1. DOD

Because the sources of insider threat are disparate and varied, because the effects of insider attacks are wide-reaching, and because the Insider Threat program's footprint is expanding to encapsulate each new ilk of threat, there is a need for a single, standardized insider threat training program. Although EO 13587 began the Insider Threat program in 2011, President Obama deferred the program's development, implementation, and training standards to the NITTF, which in turn deferred execution of training to the departments and agencies (NITTF, 2012). Detailed in the "National Insider Threat Policy and Minimum Standards for Executive Branch Insider Threat Programs" (2012, p. 4), the baseline training standards for training, education, and awareness require departments and agencies to provide curriculum that is "either in-person or computer-based… to all cleared employees within 30 days of initial employment, entry-on-duty, or following the granting of access to classified information, and annually thereafter." The standards also include several minimum curriculum topics: the importance of detection and reporting, methodologies of

adversaries, indicators of insider threat behaviors, reporting requirements, counterintelligence, and security (NITTF, 2012).

The DOD implemented EO 13587 and NITTF standards via DOD Directive 5205.16 (2014) and across several forums. The Defense Security Service (DSS) provided security education and training programs for DOD members and contractors. Additionally, the DOD integrated insider threat into its annual cybersecurity training as a module and implemented annual total force counterintelligence training. Directive 5205.16 (2014, p. 3) mandates the audience for awareness training to include "DOD military and civilian personnel, DOD contractors, and volunteers who have access to DOD resources," yet it does not distinguish which of these groups should receive training versus education. DOD Directive 5205.16 (2014) also modified several programs (security, civilian and military personnel management, workplace violence, emergency management, law enforcement, and antiterrorism risk management) to address insider threat risks in the DOD. While the DOD has disseminated CInT information widely and to a host of other programs, there remains a need for a single, standardized insider threat training program that also distinguishes education.

2. USAF

The USAF implemented EO 13587, the NITTF standards, and DOD Directive 5205.16 via Air Force Policy Directive 16–14 (2019). This directive expands and details training standards for the USAF; notably, AF/A1 is responsible for integrating insider threat into various training and education courses such as professional military education (PME). Format requirements are not particular, nor is the venue for curriculum delivery defined in this directive, though the mention of PME implies that ACSC and SNCOA are necessary venues for CInT training and education.

AFI 16–1402 (2020) implements insider threat education and training measures with greater specificity. The AFI governs the administration of insider threat training throughout all USAF echelons- from Headquarters to unit personnel- and directs CInT program administrators to provide training to command-level personnel, though it does not define a curriculum for this audience. A listing of curriculum topics (i.e., issues of an

interpersonal, technical, financial, personal, mental, or social kind) does signal a curriculum that targets concerning behaviors in individuals. While AFI 16–1402 (2020) does mandate the development, implementation, and management of CInT programs within squadrons, the instruction does not specify development of any CInT training course or any course, regardless of audience. Furthermore, AFI 16–1402 (2020) does not ascribe different training or education requirements to different echelons of audiences, but the Office of the Secretary of the Air Force Department for Security and Investigative Programs, Special Program Oversight, and Information Protection (SAF/AAZ) material titled "Insider Threat Program Training & Awareness Job Aid" does. The document defines four categories:

1. Insider Threat Senior Official/Program Manager: A Senior Official is a member of Component Senior Leadership with overarching cognizance of the program to include budget and high-level execution of requirements. The Director, Security, Special Program Oversight and Information Protection (SAF/AAZ) is the designated representative and is responsible to SAF/AA for CInT management and accountability IAW AFI 16–1402.
2. Insider Threat Program Management Personnel: Military, civilian, and contractor security professionals and practitioners who have the responsibility for establishing, supervising, and/or managing Hub-level operations within the AF CInT. Examples of these billets are the SAF/AAZ CInT team and the AF Hub Manager.
3. Insider Threat Program Operational Staff: Cleared military, civilian, and contractor security professionals and practitioners who have the responsibility for participating in Hub-level operations.
4. General Workforce: general workforce is defined as all cleared military, civilian personnel, and contractors at AF facilities, excluding industry. (SAF/AZZ, 2018. pp 2–3)

By this definition, command-level personnel fall into the general workforce category; as such, they receive the same training as their trainees. Because the CInT program places critical responsibilities on command-level personnel, it stands to reason that they need to internalize a knowledge and understanding of CInT greater than the simple awareness that the general workforce training provides. Since ACSC and SNCOA are the two schoolhouses that educate emerging command-level personnel, it further reasons that these venues would be appropriate for a CInT education curriculum.

Absent that curriculum, command-level personnel must resort to suboptimal training methods currently available. Although there are a host of CInT training courses available, administering insider threat awareness training takes one of three forms-primarily: (1) an Air Education and Training Command (AETC) computer-based training (CBT) course, (2) a Center for Development of Security Excellence (CDSE) CBT course, or (3) a non-e-learning course (SAF/AAZ, 2018).

The AETC insider threat CBT was accessible on the Advanced Distributed Learning System (ADLS) database (now retired). This self-paced course had the trainee read slides or listen to audio tracks which relayed CInT information. The myLearning database replaced ADLS, but there is no insider threat awareness course available as of the date of this research.

CDSE supplies an extensive library of insider threat information and a multitude of training and education options. The core CDSE insider threat awareness CBT covers the NITTF's five main categories: leaks, spills, espionage, sabotage, and targeted violence. CDSE also offers a broad library of open-source materials and courses as well as a database of insider threat case studies, certifications, 15 specialized CBT courses, more than 40 job aids, games, posters, and videos (CDSE, n.d.).

Command-level personnel also have authority to administer and receive insider threat awareness training via a non-e-learning format (i.e., in-person training); if in-person training occurs, it must address a list of topics defined in AFI 16–1402. This includes: current and potential threats at work, overall threat awareness, reporting suspected insider activity to program staff, recruiting and collection methods, insider behavior indicators (to include violent indicators), and fulfilling counterintelligence and security specific reporting requirements (SAF/AAZ, 2018). The USAF does not provide commanders or supervisors with a standardized template, instructor guide, or required reference material. While CInT trainers can exercise their choice of training materials (of which there are myriad), the format of the training materials is of the same ilk: directive.

3. USAF PME

Air University (AU), the prime educator for the Air Force, administers a full spectrum of curricula for officer, enlisted, and civilian programs (AU, 2021). AU has multiple schoolhouses that prepare students for greater responsibilities throughout their career progression. Each schoolhouse tailors its educational programs to its respective audience while contextualizing its curricula in principles of leadership, military doctrine, and air and space power (AETC, n.d.). ACSC, the Air Force's intermediate officer PME schoolhouse, educates emergent commanders; SNCOA, the Air Force's third level of enlisted PME, educates emergent supervisors (AETC, n.d.).

PME curricula requirements derive from two major sources: congressional mandates and Chairmen of the Joint Chiefs of Staff (CJCS) special areas of emphasis (Joint Chiefs of Staff, 2020). The authors discovered through interviews that neither ACSC nor SNCOA incorporates CInT education as a part of the required curricula, nor has there been any requirement to do so. Rather, representatives at either schoolhouse administer CInT training as a general awareness briefing to the emergent commanders or supervisors en masse. While that in-person training method conforms to the requirements in AFI 16–1402- in that the briefs address the required topics, the format is insufficient to educate its intended audience in the nuances of insider threat. Moreover, the format persists despite SecDef Austin's (2021) call to update existing CInT training for different leadership levels to bolster CInT program effectiveness.

There is an obvious disconnect between the vital, unique role that AFI 16–1402 (2020) reserves for command-level personnel and the directive, general CInT training that SAF/AAZ (2018) defines as appropriate for them. AF 16–1402 (2020) states that commanders and supervisors are critical to the reporting process. If reporting insider threats were a simple matter, then concerns over the state of CInT training might be unwarranted. Yet recognition necessarily precedes reporting, and since commanders report that recognition of indicators is difficult amidst a "gray area" of general behavior (Austin 2021), the matter is not so simple, evidently. Alternatively, were it the Air Force's task and purpose to make reporting insider threats a thoughtless process, then no adjustment to its training would be warranted. Yet SecDef Austin, cognizant of the intrinsic nuances and

challenges, indicated that reporting must be a thoughtful process. Therefore, the disconnect is concerning and necessary to address at ACSC and SNCOA.

E. SUMMARY

Insider threat is a problem as old as society itself: while its definition expands to encapsulate evermore types of incident, its essential categorization remains betrayal. Though betrayal is universal and unavoidable from the founding of any organization, insider threats can be especially damaging in the DOD- due to the high level of training and criticality of information that military members have access to. The DOD has grown its CInT program over the last decade in response to new threats and has evolved its reporting capabilities with the standup of entities such as DITMAC. However, the uptick in DOD personnel involvement in insider threat incidents (e.g., the Manning intelligence leaks, the Fort Hood and Navy Yard shootings, the Capitol Hill riots, etc.) exposes a dire shortcoming in CInT education throughout the Department.

Currently, the USAF offers no CInT education, and the training it does offer is simplistic and directive in nature. The authors found that the training does not prepare command-level personnel to understand the complexities of insider threat well enough to recognize and discern behavioral nuances. As such, the most important group in the reporting chain is ill-equipped to fulfill its responsibilities. While the USAF has recognized the need to incorporate CInT into PME, the ways and means of its inclusion remain undefined. The authors identified ACSC and SNCOA as natural venues for a dedicated CInT curriculum.

In the literature review that follows, the authors will examine the differences between directive, pedagogical learning and transformative, andragogical learning. The authors will note the principles of andragogy that are foundational to creating effective adult education environments. The methodology section explains the authors' ways of evaluating the educational procedures at ACSC and SNCOA. In the subsequent analysis section, the authors describe the interview findings and reveal the degree of adult-orientation present at both schoolhouses and thus the suitability of both for implementing CInT education. The authors conclude with a summation of their research and findings.

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II. LITERATURE REVIEW

There is a well-established understanding in academia that adults learn differently than children. Since there are no children in the USAF, then it stands to reason that if the USAF intends to educate its workforce with CInT curriculum effectively, it first needs to understand the ways in which adult learning differs from child learning. Enter andragogy: the foremost theory on adult education, founded on core principles that are universally applicable to myriad adult learning environments and requirements. Grounded by assumptions of adults as self-actuated individuals, andragogy emphasizes the needs of the learner as well as mutuality and negotiation between learner and educator to fulfill those needs. Andragogy transcends directed learning by framing adult learning as a transformative, engaging experience. By using andragogical principles in its educational procedures, the USAF can cater CInT curriculum to its workforce of adult learners in a method more effective than the prosaic reception of required information.

A. WHAT IS ANDRAGOGY?

The term *andragogy* is attributed to German educator and editor Alexander Kapp, who, in 1833, used the term in reference to the teaching stylings of Plato and Aristotle. It went unused for decades- despite expanding research into adult education- until Malcolm Knowles reintroduced it to academia in 1963. European andragogy differs slightly from the American usage in that it harbors a more communal focus than American andragogy, which is more individualistic both in conception and application. Although it is from the latter that this research takes its direction, European insights can be relevant when analyzing contemporary American education.

The theory of andragogy, an adult-oriented education perspective, radically modified the convention of pedagogy, a child-oriented education methodology, which dominated the field of education from the seventh century to the early twentieth century (Knowles et al. 2020). In the pedagogical paradigm, students bear no decision-making responsibility but merely receive the curriculum. Six assumptions of learners govern pedagogical theory: (1) that learners need to know only what is taught; (2) that the learner

is dependent on the instructor; (3) that the learner's experience does not affect his learning; (4) that learners' readiness to learn is transactional (i.e., effort for grade); (5) that learning is the act of internalizing subject matter; (6) that learners' motivation is external (Knowles et al. 2020). It takes little analysis to see that these assumptions are true of recipients of USAF CInT training.

When interest in adult learning renewed in 1920s America, a host of researchers sought to identify differences between the ways that children and adults learn and to codify adult education concepts into theory. Chiefly relevant and useful were the foundational assumptions of adult education that Lindeman espoused in contradiction to the pedagogical: (1) that adults' motivation to learn is need-driven; (2) that adults' orientation to learning is life-centered; (3) that adults' best resource for learning is experience; (4) that adults are self-directing; (5) that age exacerbates differences among individuals (Knowles et al. 2020). These assumptions, by acknowledging adult independence, challenged the one-way, top-down dynamic that was present in modern education institutions, at which the student was subordinate to the teacher. In contrast, adult education theory recognized the student as an equal participant in the learning process and as capable of self-direction.

Later research into adult education, to which Jacks (1929), Leigh (1930), Mackaye (1931), Rogers (1938), Merton (1939), Cherrington (1939), Thomas (1939), and Fields (1940) contributed, worked from and supported Lindeman's assumptions independently and ossified them as cornerstones of adult education theory. Concurrently, developmental psychologists Freud, Jung, Erikson, Maslow, and Rogers lent added credibility to Lindeman's assumptions with their own research into adult behavior, subconsciousness, and actualization (Knowles et al. 2020).

B. KNOWLES'S ANDRAGOGY

With these contributions in mind, Malcolm Knowles refined Lindeman's earlier treatises while reintroducing andragogy to academia in 1963. Though he only tailored the assumptions that adult learners are self-driven, oriented toward pragmatic, timely application of theories to their lives, and reliant on their experiences, Knowles countered that adults' motivations to learn were primarily internal (though not necessarily needs-

driven). Furthermore, he added that adults' readiness to learn was a function of developmental tasks intrinsic to their social roles (Knowles 1980). Figure 1 depicts Knowles' six andragogical principles in practice.

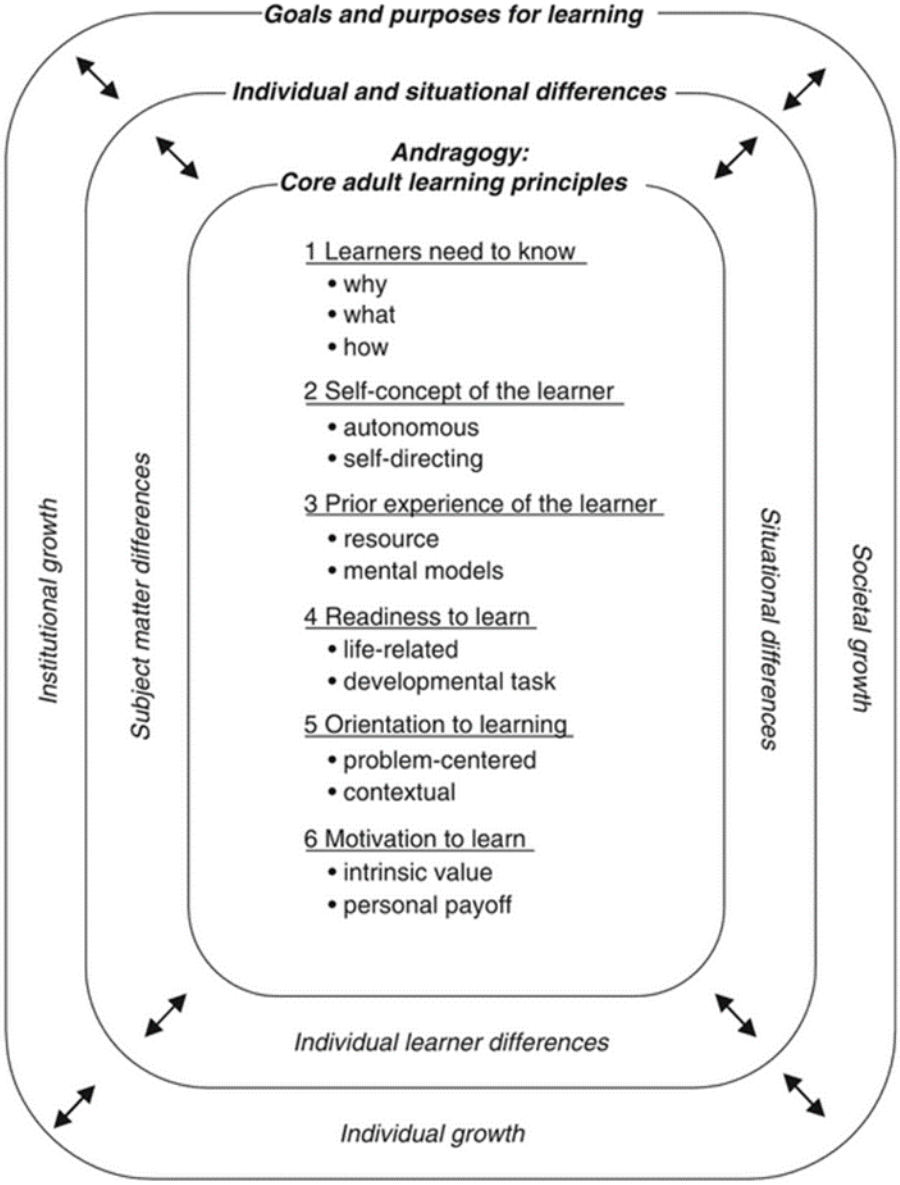

Figure 1. Andragogy in Practice Source: Knowles et al. (2020).

Critics such as Cross (1981) and Rachal (2002) challenged Knowles's assumptions of adult learners, educators, and situations as idealized; thus, they argued, since reality is

not ideal, applying andragogical assumptions results in an impure state of andragogy. Said Rachal:

> A particular implementation of andragogy may fall short of the idealized view in that, for example, the facilitator lacks the art of andragogy, or one or more of Knowles' assumptions about the adult learner do not fully apply, or the facilitator may think she is providing more learner control than in fact she is. (Rachal 2002, p. 212)

Whereas ideal andragogy might manifest as students and teachers deciding jointly what curriculum they will study, for example, practical conditions might render such an act impossible, if not just difficult. For example, given the USAF's authority to mandate its schoolhouses' educational objectives, it is not realistic that ideal andragogy should manifest in any USAF schoolhouse.

While this critique is valid and necessary in tempering expectations for applying andragogical principles to educational environments, mere recognition of its truth does not condemn the greater theory, for Knowles knew of the purity problem and recognized, as critics did, that andragogy manifests on a continuum. On one end of that continuum is the idealized state (andragogy); on the other, an imperfect implementation (pedagogy) (Knowles 1980). It is also in recognition of andragogy's being an extremum that Knowles conditionalized his andragogical core principles as being in their "pure and extreme form" (Knowles 1980).

Andragogy's ineffable open-endedness draws the most criticism (Knowles et al. 2020). As Davenport (1987) and Pratt (1993) noted and as Rachal (2002) echoed, andragogy is not rooted in empiricism, which, damningly, makes its efficacy impossible to verify quantitatively. This critique is a pedantic overreading of Knowles's occasional description of andragogy as both an art and science, for sciences are definitionally empirical with testable hypotheses, which andragogy obviously lacks. However, that scholars and education professionals contentiously debate whether andragogy is a philosophy (Pratt 1993), a collection of assumptions (Brookfield 1999) or guidelines (Merriam 1993), or by Knowles himself (1988) as a theory composed of a set of assumptions, is beyond the scope of this research and is of no consequence to its utility when analyzing adult education.

Indeed, that practitioners from varied backgrounds may interpret andragogy uniquely and within a framework diegetic to their own disciplines, be it psychology, education, human resources, et alia, explains not only andragogy's reaching applicability but its longevity and so also its worth in lieu of sterile, quantified effectiveness. According to Knowles et al. (2020), andragogy's universality is due in part to its being a "transactional model that speaks to the characteristics of the learning transaction, not to the esoteric goals and aims of that transaction," and in part to its six underlying core principles, which, when applied, increase the effectiveness of the learning processes for adults demonstrably. Andragogy's subject and goal agnosticism as well as its individual-centric focus afford it portability to any kind of learning situation and any kind of adult. As such, andragogy presents itself as a fitting theory on which to base an analysis of USAF education of any kind- to include CInT curriculum.

C. OTHER PERSPECTIVES ON ADULT LEARNING

Adjacent to andragogy theory is Mezirow's Transformational Learning Theory. Mezirow rested his constructivist theory on the foundational premise that adult learners create new understandings that weave into their existing knowledge (Mezirow, 1991); simultaneously, adult learners rely on their past to process and discriminate new information. Cranton parlayed Mezirow's theory into "seven facets" that describe a notional learning environment:

1. An activating event that typically exposes a discrepancy between what a person has always assumed to be true and what has just been experienced, heard, or read
2. Articulating assumptions, that is, recognizing underlying assumptions that have been uncritically assimilated and are largely unconscious
3. Critical self-reflection, that is, questioning and examining assumptions in terms of where they came from, the consequences of holding them, and why they are important
4. Being open to alternative viewpoints
5. Engaging in discourse, where evidence is weighed, arguments assessed, alternative perspectives explored, and knowledge constructed by consensus
6. Revising assumptions and perspectives to make them more open and better justified

7. Acting on revisions, behaving, talking, and thinking in a way that is congruent with transformed assumptions or perspectives (Cranton 2002, p. 66)

These facets targeted transformation of adults into active, recurrent learners versus passive, onetime trainees. Pratt (2002) also propagated the constructivist perspective of adult learning, saying: "…the primary goal of education or training is to develop increasingly complex and sophisticated ways of reasoning and problem solving within a content area or field of practice." The idea that learning transcends task efficiency to address continued and sophisticated critical thought is not unique to Transformational Learning Theory but is a critical element of adult learning shared by the andragogy advocates. Because the DOD expects its command-level personnel to apply sophisticated critical thought to nuanced concepts and situations (e.g., CInT), it reasons that education offered to those personnel must be transformative- not directive- in nature.

D. IMPLEMENTING ANDRAGOGY

Learning modeling is a separate process that follows the andragogical process. With continued research and feedback from educators and from learners, Knowles evolved the process elements of andragogy, which culminated into the following process:

1. Preparing learners with information and for participation to develop realistic expectations and conceptualize content
2. Developing a learning climate of trust, respect, informality, and openness
3. Planning by learner and facilitator
4. Diagnosis of needs by mutual assessment
5. Setting of objectives by mutual negotiation
6. Designing learning plans sequenced by readiness and defined by problem units
7. Establishment of learning activities
8. Evaluation by mutual program measurement and re-diagnosis of needs (Knowles et al. 2015, p. 115)

Knowles inserted the step of preparing learners as the first in response to critics like Brookfield (1999), who contested the assumption that adults were self-directed. Rather, observed Brookfield, not all adults have that capacity; many, in fact, have ingrained dependencies on pedagogical instruction residual from childhood that must resolve to ease transition into the andragogical process.

E. SUMMARY AND REVIEW OF RESEARCH QUESTIONS

Knowles's six assumptions of adult learners apply to typical USAF command-level students: they have a need to know, are autonomous, have meaningful experiences on which to contextualize new information, have a life-related readiness to learn, are problem-centered, and have internal motivations to learn. It is reasonable, then, to infer that command-level schoolhouses ACSC and SNCOA employ andragogical principles to their educational procedures. Furthermore, if that is the case, then it would stand to reason that the USAF could easily insert a CInT curriculum into either schoolhouse to meet its educational objective. Interviews provided insights into (1) how the USAF trains its command-level personnel with CInT curricula at ACSC and SNCOA and (2) the degree to which the educational policies and procedures at these institutions are adequate for educating emerging command-level personnel on a topic as complex as CInT.

As to the efficacy of offering CInT education at ACSC or SNCOA, however, it is also necessary to consider the reliability of the schoolhouses as relevant to their meeting educational requirements, both internal and external. Interviews revealed that numerous feedback mechanisms to the schoolhouse provide sureties of reliability: student surveys, instructor feedback reports, faculty climate surveys, COCOM feedback, Congressional inquiry, routine audits, and other mechanisms verify the quality and effectiveness of ACSC and SNCOA education. Beyond the multidimensionality of feedback, its specificity, frequency, and credibility attest to schoolhouse reliability in meeting educational requirements.

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III. METHODOLOGY

To evaluate USAF schoolhouses' practices for congruence with andragogical principles, the authors needed to derive interview questions from Knowles's principles. The team chose to base questions on Knowles's process elements for an andragogical curriculum model of learning. When combined, these elements constitute a set of procedures for facilitating adult learners' acquisition of course content. Conveniently, from Knowles's model, Henschke (2014) developed a set of questions to guide the andragogical educator. The authors adapted those questions into interview questions and posed them to representatives of ACSC and SNCOA. Table 1 lists each element the interviews questions relate to within Knowle's model and Henschke's guiding questions:

Table 1. Interview Questions.

Knowles's (2015) Model	**Henschke's (2014) Questions**	**Interview Questions**
"Preparing adult learners for the program is for them to gain insight and understanding for what is to come."	"What procedures should I use to help prepare the adult learners to become actively involved in this course and to meet their expectations?"	What procedures does the schoolhouse use to help prepare students to become actively involved in courses and to meet students' expectations?
"Setting the Learning Climate is for helping adult learners become comfortable, relaxed, trusting, mutually respectful, informal, warm, collaborative, supportive, open, authentic, human, pleasurable and fun."	"What procedures should I use with this particular group to bring these learning climatic conditions into being?"	What procedures does the schoolhouse use with students to evoke a positive climate for adult education?
"Planning the Learning Experience is to be mutually done by the learners and facilitators."	"What procedures will I use to involve the learners in planning?"	What procedures does the schoolhouse use to involve students in planning?
"Diagnosis of the Learner's Needs is assessed mutually by learners and facilitators."	"What procedures will I use in helping the participants diagnose their own learning needs?"	What procedures does the schoolhouse use in helping students diagnose their own learning needs?

Knowles's (2015) Model	Henschke's (2014) Questions	Interview Questions
"Setting the Learning Objectives are mutually negotiated by learners and facilitators."	"What procedures can I use for helping involve the adult learner in translating their learning needs into andragogical learning objectives?"	What procedures does the schoolhouse use for helping involve students in translating their learning needs into andragogical learning objectives?
"Designing the Learning Plans is through learning contracts, learning projects, and sequenced by readiness."	"What procedures can I use for involving the learners with me in designing a pattern of andragogical learning experiences?"	What procedures does the schoolhouse use for involving students with instructors in designing a pattern of andragogical learning experiences?
"Learning Activities are conducted through inquiry projects, independent study, and experiential techniques."	"What procedures can I use to make certain the learners are full engaged and involved with me in managing and carrying out their learning plan?"	What procedures does the schoolhouse use to make certain the learners are fully engaged and involved with the instructor in managing and carrying out their learning plan?
"Evaluation of the Learning is by learner collected evidence validated by peers, facilitators, and experts."	"What procedures can I use to involve the learners responsibly in evaluating the accomplishment of their learning objectives and meeting the course requirements?"	What procedures does the schoolhouse use to involve students' responsibly in evaluating the accomplishment of their learning objectives and meeting the course requirements?

In keeping with the notion that andragogical practices manifest on a continuum, the authors established a continuum along which to discriminate whether schoolhouse processes were pedagogical, somewhat andragogical, moderately andragogical, or ideally andragogical. The authors evaluated each response and demarcated its position along this continuum based on the degree to which schoolhouse processes adhered to Knowles's (2015) eight model elements, specifically, and, generally, the degree to which they adhered to Knowles's (2020) six andragogical principles as listed in Figure 1.

With the interview questions and evaluation metric set, the authors conducted interviews with representatives from ACSC and SNCOA. Seeking the greatest breadth of perspective, the authors solicited and met with interviewees of various positions and

backgrounds. Following each interview, responses were assessed for relevancy to each question: when an interviewee supplied information that was relevant to a question other than the one asked, that information was noted for use in the more relevant question.

The authors desired a high degree of interrater reliability; therefore, for both ACSC and SNCOA, they evaluated each interviewee's eight responses and determined their positions along the andragogical continuum independently. When all interviews were complete for a schoolhouse, each author independently evaluated the schoolhouse collectively, relying on the cumulative responses of all interviewees from that schoolhouse and the separate ratings that the author had ascribed to each interviewee's response. Following that complete independent evaluation and with their cumulative ratings for each process element, the three authors met to compare their findings. Where the authors concurred, the findings were recorded without discussion.

Where the authors did not concur, they discussed their collective findings until they reached consensus. The authors asked eight questions to each schoolhouse representative and compared their total assessments for the schoolhouse. Of the eight assessments that the authors compared for ACSC, six required discussion (i.e., an interrater reliability rating of 25%). No assessment varied from another by more than one place along the rating continuum (e.g., moderate vs. somewhat). Of the eight assessments that the authors compared for SNCOA, four required discussion (i.e., an interrater reliability rating of 50%). No assessment varied from another by more than two places along the rating continuum (e.g., moderate vs. pedagogical). The low level of initial interrater reliability stems from the different pieces of information that each of the authors recorded as relevant during interviews. When meeting to form a consensus, each author contributed a unique observation for almost all assessment items. The final interrater reliability rating for both schoolhouses was 100% following discussions, when consensus was reached.

From this final assessment, the authors were able to make broader interpretations about the andragogical processes at each schoolhouse than any individual respondent could supply or that any of the authors could determine individually. Figure 2 illustrates the assessment process.

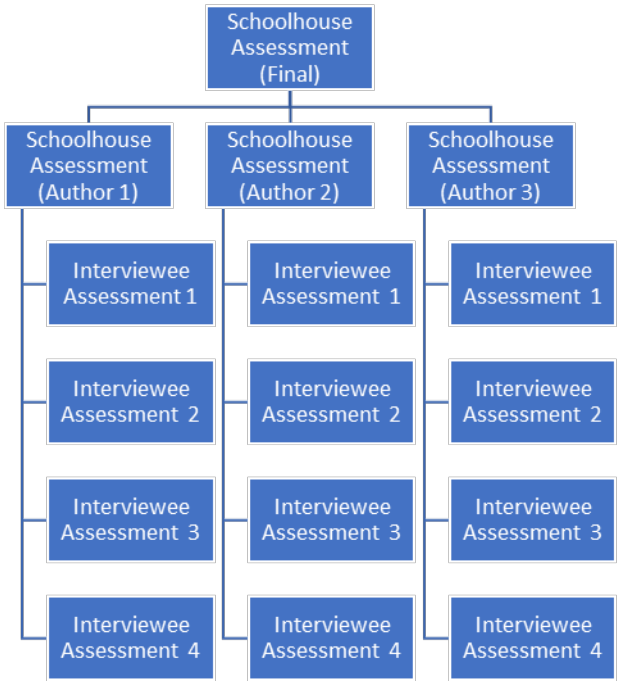

Figure 2. Analysis Methodology

IV. DATA AND ANALYSIS

For the authors to determine whether a CInT curriculum would be a good fit at ACSC and/or SNCOA, the authors needed to assess the degree to which the schoolhouses incorporate adult learning principles into their educational procedures, generally. The authors queried interviewees about the schoolhouses' educational procedures: procedures need not be codified in policy with formal governance but can also be acted out en masse informally. In fact, interview responses for both ACSC and SNCOA indicated that there are no formal processes for several of Knowles's process elements, yet the authors recognized both formal and informal standards of practice when identifying what procedures each schoolhouse practices. The analysis below is not a complete account of all the formal and informal procedures the schoolhouses employ; it is, however, a complete account of the relevant observations that interviewees provided.

A. AIR COMMAND AND STAFF COLLEGE

1. Preparing Adult Learning

ACSC students attend a week's long orientation that conveys the school's purpose, mission, and vision, the standard rules of engagement for being in an academic environment, and an introduction to the core courses and respective curricula. A welcome packet that provides this information in general terms precedes students' attendance. Furthermore, representatives of each of the schools' formal resources (i.e., academic resources such as the library and writing center and social resources such as the Red Tails Association), lay out what services and functions students can expect. ACSC senior leaders lay out the current events at the schoolhouse and their expectations (both for students and for faculty); faculty members then provide general guidance on how to read and write in an academic environment, which serves as a refresher to the new arrivals. Students also receive guidance on how peer feedback will function at the schoolhouse. Faculty encourage and solicit questions from students throughout orientation.

Because of the amount of time and because of the amount and breadth of information dedicated to preparing adult learners for the academic environment, the

authors decided that ACSC ideally prepares them with insights and understanding of what is to come.

2. Setting a Climate

All interviewees explained that at ACSC, faculty treat students as adults. Specifying this broad statement, they stated that faculty respect adult learners' maturity, consider and influence their orientation to learning, and draw on their experiences in class. These details harken to the principles for adult education, which Knowles, Cranton, Pratt, et alia described. Indeed, ACSC faculty receive extensive training on educating adults and on andragogical principles- particularly the distinction between andragogy and pedagogy and how the two differ in application. Faculty are prepared to create a respectful, human climate in their classrooms.

Faculty train in and use the Socratic method of teaching (e.g., posing open-ended questions to students to generate critical thought); the schoolhouse even disincentivizes using lectures as a teaching method by recording it unfavorably in performance reports. During faculty development, peer feedback refines instructor methods toward the andragogical. Instructors learn to solicit students' inputs that evoke their lived experiences. Class sizes are small by design (at 14 students per class on average but not to exceed twenty-six) so that instructors have more and deeper engagement with each individual learner. Faculty learn these measures with the expressed intent of providing an engaging and authentic climate.

Additionally, ACSC offers social clubs (e.g., the Red Tails booster club and the Gathering of Eagles) and other means of networking to make the climate warm, enjoyable, and fun. Networking, faculty recognize, is students' favorite and primary objective at ACSC (as evidenced by end-of-course and post-graduation surveys); as such, class diversity is multifaceted so that a class includes students of various career fields, sexes, nationalities (as international students also attend ACSC), and learning styles. Every term offers different class rosters to maximize networking opportunities in class. Moreover, students can attend student-only and student-faculty socials, which engender a climate of

informality and trust. “Education is about relationships” is a favored and practiced motto at ACSC.

Furthermore, students hold leadership positions for their classes and meet regularly to address student concerns (e.g., limits on last-minute changes to schedules, fulfillment of special equipment requirements, student safety, etc.). The ACSC Commandant engages student leaders proactively and acts to fulfill communicated needs. Students also enjoy access to faculty at all levels: instructors are always available to field students’ concerns, and the Dean of Students has an open-door policy to do the same. Faculty respond to students’ needs timely to ensure a climate of trust.

For these reasons, the authors decided that ACSC sets an ideal climate conducive to adult education.

3. Planning the Learning Experience

Due to the academic planning process and its milestones, students cannot influence the planning of their own education while at ACSC as a consequence of DOD, CJCS, and USAF policies governing, among other things, learning objectives, curricula, and criteria for attendance, eligibility, selection, and removal of students.

This rigidity would indicate a pedagogical procedure for academic planning were it not for one thing: students can and do influence academic planning for the following years’ students. After each class, students submit end-of-course surveys that convey their assessment of such things as the class design, its objectives’ relevancy to their work and life, the instructor’s methodology and effectiveness in teaching, what was done well, and what needs changing. In similar fashion, students submit post-graduation surveys as a means of conveying their assessment of ACSC, broadly. Faculty place significant weight on student responses: multiple interviewees said that student feedback weighs equally or greater than faculty feedback when faculty plan for the following academic year.

Also worth noting- though less impactful- is that students can realize a modicum of planning their education by selecting two elective classes. However, students have negligible or no effect on those classes’ design or implementation. More control is possible

if students elect to conduct an independent study (indeed, this is ideally andragogical as students would design the study through mutual agreement with the sponsoring instructor), but independent study is the only way students truly plan their education.

Accounting for the earnest consideration ACSC faculty give to student feedback and the translation of that feedback into adjustments of next years' academic plans, the authors decided that ACSC somewhat includes adult learners in the planning of education- even if it's not the planning of their own education.

4. Diagnosing Learner Needs

During orientation week, ACSC requires all new students to take a battery of personality surveys as well as a diagnostic survey to determine how they learn best; faculty then ensure a diverse mix of students in each class. Doing so ensures two things: (1) that students encounter curricula in a variety of teaching styles and (2) that instructors are versed in a variety of teaching styles to best engage a variety of individual learners. Instructors are aware of their students' individual learning styles and adapt their teaching style to accommodate as needed. Instructors do not assist only their own students but are available to the entire student body, particularly when their academic expertise is relevant to a student's learning need.

Additionally, students and instructors can diagnosis learning needs mutually through learning assessments, but at ACSC, instructors regularly offer to review drafts of graded assignments before final submittal. Doing so facilitates diagnosis of writing defects that necessitate improvement. Some instructors even require submittal of drafts for such feedback. Mandatory writing days and voluntary access to the writing center provide opportunities outside of the classroom for mutual diagnosis of learner needs.

Although there is a heavy emphasis on students' needs as pertaining to writing acumen (indeed, the Dean of ACSC issued a directive to faculty in Academic Year '22 to focus on strengthening students' writings), instructors are directly incentivized to assist students generally. As one interviewee explained, the mentality of instructing at ACSC for selfish research purposes is insufficient. Rather, an instructor's focus on educating provides the foundation of annual performance evaluations, so instructors who do not place their

students' learning needs first are unlikely to be employed at ACSC for long. Regular evaluations throughout the academic year (once for professors and twice for associate professors) ensure instructors meet that expectation.

Lastly, when a student has an identified learning need, instructors routinely communicate that need to the student's other instructors to ensure that that student receives sufficient assistance throughout his time at ACSC- not just in one class. Individual mentoring (academic or otherwise) is also available to students as a means of mutually diagnosing learning needs.

Because of the number and kind of opportunities to diagnose learning needs (both mandatory and voluntary) and because of the direct incentive for instructors to identify and respond to such needs, the authors decided that ACSC ideally diagnoses learner needs on a mutual basis.

5. Setting Learning Objectives

At orientation, faculty solicit students' expectations and personal objectives for their learning experience. However, formal learning objectives are out of students' control and- to some degree- out of ACSC's control as a consequence of DOD, CJCS, and USAF policies governing, among other things, learning objectives, curricula, and criteria for attendance, eligibility, selection, and removal of students.

Instructors can account somewhat for their students' learning objectives by making small adjustments to the class as it progresses, but by the time instructors are aware of their students' personal objectives, they have already codified their schoolhouse-approved lesson objectives. Changing the lesson objectives to align to any one student is not possible.

This rigidity would indicate a pedagogical procedure for academic planning were it not for one thing: students can and do influence learning objectives for the following years' students. After each class, students submit end-of-course surveys that convey their assessment of such things as the class design, its objectives' relevancy to their work and life, the instructor's methodology and effectiveness in teaching, what was done well, and what needs changing. In similar fashion, students submit post-graduation surveys as a

means of conveying their assessment of ACSC, broadly. Faculty place significant weight on student responses: multiple interviewees said that student feedback weighs equally or greater than faculty feedback when faculty translate learning objectives into lesson objectives for the following academic year.

Accounting for the earnest consideration ACSC faculty give to student feedback and the translation of that feedback into adjustments of next years' objectives, the authors decided that ACSC somewhat includes adult learners in the negotiation of learning objectives- even if it is not the objectives for their own education.

6. Designing Learning Plans

ACSC does not use learning contracts. Given that students are not involved in the planning or setting of objectives for their own education, learning contracts (meant to codify the mutual agreement between instructor and student of how learning experiences will manifest) would be inappropriate. However, new instructors do receive two weeks of training oriented toward adult education and its nuanced considerations. Instructors learn to develop lesson plans that lead students to a path of self-discovery via distinct learning experiences- notably, cumulative learning projects. Peer evaluations throughout the academic year reinforce the schoolhouse's promotion of andragogical methods; as applicable to learning plans, instructors receive meaningful feedback on the efficacy of plans and their orientation to leaning outcomes.

Students can influence lesson plans somewhat by providing their instructors with ad hoc feedback throughout the academic term. The small class sizes (at fourteen students per class on average but not to exceed twenty-six) enable instructors to be flexible in their lesson plans, yet they are limited in their flexibility by the need to account for all students, collectively. While the format of assignments is similarly predetermined, students can influence their modality of learning. In so doing, students directly influence their learning experiences.

Also, instructors build their plans on the foundational concept of Bloom's taxonomy (Knowles 2020); particularly, lesson plan designs use learning projects to spur students up the hierarchy of knowledge domains to higher order ones- typically Analysis,

Synthesis, and Evaluation. Progression up the hierarchy manifests as students' progression through learning projects sequenced by their readiness to advance as evidenced by comprehension.

Therefore, because ACSC faculty deliberately design learning plans in a manner that emulates Knowles' process element (despite a lack of direct student involvement and learning contracts), the authors decided that ACSC somewhat includes adult learners in the creation of learning plans. Were it not for the incorporation of andragogical principles into the learning plans, this process element would be pedagogical by the authors' account.

7. Conducting Learning Activities

The development of learning activities is a semi-cooperative process in which faculty critique and refine one another's plans such that the final activities are inarguably linked to the learning objectives. ACSC leadership closely tracks what learning activities occur in each class in part because ACSC is subject to regular audits. Since audits determine, among other things, the reliability of the schoolhouse to fulfill the COCOMs' learning objectives, the translation of those objectives into activities is critical.

While ACSC offers independent study opportunities only as elective classes, those student-designed electives, the core classes, and the instructor-designed electives all incorporate inquiry projects. Additionally, all classes must engage students. To verify that its process delivers classes that are as engaging as designed, ACSC explicitly monitors student engagement level in the classroom through instructor evaluation reports. Because these reports, in concert with other observational data, inform decisions to retain instructors, instructors have a direct incentive to teach in a way that maximizes student engagement. With the Socratic method of teaching (e.g., posing open-ended questions to students to generate critical thought) being a foundational teaching style at ACSC, the normal observation is that students engage the material and draw from their lived experiences to contextualize the curriculum.

While the level of student engagement varies among instructors, whose unique teaching styles likewise vary, input and feedback during the class development process ensures that learning activities are opportunities for inquiry into the curriculum, that their

design is likely to be engaging in execution, and in some cases, that they are experimental. Gamification, for instance, is a novel technique in use for some classes at ACSC: it generates- by necessity- significant student engagement. Similarly, the small class sizes (at fourteen students per class on average but not to exceed twenty-six) begs a greater reliance on student engagement than would a large lecture.

Because instructors apply andragogical principles to the development of learning activities, because student engagement is the focus of their design, and because ACSC leadership monitors that engagement in a meaningful way, the authors decided that ACSC moderately engages its students. It does not do so ideally because learning planning- to include the planning of activities- does not incorporate student input but for the occasional independent study opportunity.

8. Evaluating Learning Achievements

Apart from the cases of independent study and certain electives, ACSC students cannot affect the weighting of any assignment on their grade, nor can they alter the grading mechanism.

Whereas the ideal andragogical evaluation schema emphasizes subjective, qualitative evaluation rather than quantitative, ACSC uses a combined alphanumeric method of evaluation. Until recently, instructors graded students using only an alphabetic scale; however, to provide students with a more precise measure of their learning, which is critical, ACSC added the numeric component to grades. As such, students can compare their grades (since they do anyway) and understand why the merits of two A papers are not necessarily equal. Feedback on graded assignments cannot be arbitrary; rather, ACSC instructors must provide comprehensive, useful feedback to students regarding the strengths and weaknesses of their work in support of the numeric aspect of grading.

More importantly, the ways in which students receive evaluations are highly andragogical in that they involve students in the process. For example, in most classes, instructors offer to review drafts of graded assignments before final submittal. Doing so provides an informal, subjective evaluation that precedes the final, objective evaluation. Some instructors even require submittal of drafts for such evaluation. Mandatory writing

days and voluntary access to the writing center provide opportunities outside of the classroom for subjective evaluation.

Most importantly, though, is that evaluation- whether subjective or objective- routinely generates a conversation. For example, instructors issuing a grade lower than a B can expect their Department Chairs to request a full rationale supporting the grade. Critically, the Chair will ask whether the instructor and student have met to discuss the grade, whether the student understands the reasons for the grade, and what remediation plan is in place for the student's improvement. In rare cases, recompletion of work is acceptable, though in such a case, the instructor might use a maximum grade cap out of fairness to the other students. Even in less extreme circumstances, though, students can engage instructors at any time but especially during office hours to discuss their performance.

Given students' access to meaningful evaluation and given that instructors and students share accountability for grades and remedies, the authors decided that ACSC moderately employs andragogical evaluation procedures. It does not do so ideally for the lack of student involvement in designing the grading mechanism and relative weights of assignments, though that is one of Knowles's more controversial ideals.

9. Overall Assessment

The authors determined that ACSC's educational procedures are moderately or ideally andragogical when ACSC has control over the procedures. Instructors and faculty train in andragogy and are knowledgeable of adult learning concepts and methodologies. There is a heavy emphasis on appealing to students' self-directedness, and student control is promoted wherever possible. For those procedures that ACSC cannot control (i.e., those that AU directs) the authors determined that the schoolhouse implementation of those procedures is nonetheless somewhat andragogical because the schoolhouse applies andragogical principles to those procedures to account for student input. While it is impossible for ACSC students to directly control these procedures (since it is equally impossible for ACSC), that students can influence the shaping of those procedures is a somewhat andragogical manifestation of adult learning principles.

B. SENIOR NONCOMMISSIONED OFFICER ACADEMY

1. Preparing Adult Learning

SNCOA prepares its students in advance of arrival by distributing syllabi, orientation information, prerequisite readings, as well as staff and instructor contact information via email. The SNCOA webpage, to which the materials direct students, contains a host of administrative and educational information that also prepares new students.

SNCOA dedicates day one of student education to explaining facility tours, class objectives, Bloom's taxonomy, teaching methods, and expectations for students. This orientation is less andragogical owing to instructors explaining to students why SNCOA is important to them as SNCOs. While doing this contextualizes students' reason for being at SNCOA in the framing of a life-centered orientation to learning, it does so not as relevant to their being students engaged in learning but as SNCOs progressing in their careers. This is less an educational motif than a training device. Indeed, the schoolhouse objective (i.e., to instill relevant, solution-focused leadership attributes to enhance military organizations), rings with a connotation of training centricity.

Although SNCOA well-prepares its students for the program to come, because the schoolhouse treatment of learning is skewed toward career progression more than it is toward education, the authors determined that SNCOA's preparation procedures are moderately andragogical.

2. Setting a Climate

The DOD and AU dictate through policy that its schoolhouses ensure a positive learning environment. At SNCOA, faculty treat students as adults. Specifying this broad statement, interviewees clarified that faculty respect adult learners' maturity, consider and influence their orientation to learning, and draw on their experiences in class. These details harken to the principles for adult education, which Knowles, Cranton, Pratt, et alia described. Indeed, SNCOA faculty receive six months of training, in which setting a learning climate is a prominent topic, before achieving their certification. Throughout the schoolhouse, a policy of non-attribution promotes open dialogue; in the classroom,

organizing desks into a U-shape facilitates collaborative discussion. Experimental exercises lend an element of fun to other, more traditional methods of instruction.

Faculty train in and offer the Socratic method of teaching (e.g., posing open-ended questions to students to generate critical thought) as a modality of instruction. Faculty development steers instructor methods toward the andragogical: instructors learn to solicit students' inputs that evoke their lived experiences as well as to design experiences of student self-reflection. Faculty learn these measures with the expressed intent of providing an engaging and authentic climate.

SNCOA offers student-run social events and other means of networking to make the climate warm, enjoyable, and fun. Furthermore, students can share their passions and life experiences with their peers during student-run Lunch'N'Learn sessions. These occasions engender a climate of relaxation, informality, and trust.

For these reasons, the authors decided that SNCOA sets an ideal climate conducive to adult education.

3. Planning the Learning Experience

Due to the academic planning process and its milestones, students cannot influence the planning of their own education while at SNCOA as a consequence of DOD, CJCS, and USAF policies governing, among other things, learning objectives, curricula, and criteria for attendance, eligibility, selection, and removal of students.

This rigidity would indicate a pedagogical procedure for academic planning were it not for one thing: students can and do influence academic planning for the following years' students. Students submit weekly feedback on areas such as the curriculum, technology used, methods used, use of time (e.g., for guest speakers, exercises, etc.) as well as the instructor's knowledge and ability to lead students through the course. In a similar fashion, students submit post-graduation surveys as a means of conveying their assessment of SNCOA, broadly. Faculty consider student responses when planning for the following academic cycle.

Also worth noting is that students can realize a modicum of planning their education by electing their learning method in class. Instructors offer a variety of modalities to include teach backs (i.e., students leading the classroom instruction), lecture, debate, or an open dialogue of students' out-of-class research findings.

Accounting for the consideration SNCOA faculty give to student feedback and the translation of that feedback into adjustments to academic plans, the authors decided that SNCOA somewhat includes adult learners in the planning of education- even if it is not the planning of their own education.

4. Diagnosing Learner Needs

On their first day at SNCOA, students take a personality profile diagnostic to identify how they receive and interpret information; faculty are aware of students' individual profiles and can customize their style of teaching- even deferring individual lesson styles to their students for selection of the most favorable. As such, the instruction method caters to most students. While popular vote is a useful means of accounting for the most learning needs, it does discount a minority of students and their needs.

Students also discuss their own expectations and desired learning outcomes during introductions. Instructors record these and account for them via targeted discussion throughout the academic cycle. Peer-to-peer instruction, by which students adopt the mantle of instructor, offers another chance for students to tailor classes to suit their own learning needs, as well as the needs of their peers.

Additionally, students and instructors can diagnosis learning needs mutually through learning assessments, and at SNCOA, ungraded assignments create a low-pressure environment for meaningful feedback- to include diagnosis of learning needs.

Because of the number and kind of opportunities to diagnosis learning needs, the authors decided that SNCOA moderately diagnoses learner needs on a mutual basis.

5. Setting Learning Objectives

During the first week of classes, faculty solicit students' expectations and personal objectives for their learning experience. However, formal learning objectives are out of

students' control and- to some degree- out of SNCOA's control as a consequence of DOD, CJCS, and USAF policies governing, among other things, learning objectives, curricula, and criteria for attendance, eligibility, selection, and removal of students.

Instructors can account somewhat for their students' learning objectives by adjusting the teaching modality, which is elective for the students from class to class, but instructors have codified their schoolhouse-approved lesson objectives before students enter the schoolhouse. Changing the lesson objectives to align to any one student is not possible.

The rigidity of developing lesson objectives would indicate a pedagogical procedure for academic planning were it not for one thing: students can and do influence learning objectives for the following years' students. Students submit weekly feedback on areas such as the curriculum, technology used, methods used, use of time (such as for guest speakers, exercises, etc.) as well as instructor's knowledge and ability to lead students through the course. In a similar fashion, students submit post-graduation surveys as a means of conveying their assessment of SNCOA, broadly. Faculty consider student responses when translating learning objectives into lesson objectives for the following academic cycle.

Accounting for the consideration SNCOA faculty give to student feedback and the translation of that feedback into adjustments of next cycle's objectives, the authors decided that SNCOA somewhat includes adult learners in the negotiation of learning objectives- even if it is not the objectives for their own education.

6. Designing Learning Plans

SNCOA does not use learning contracts. Given that students are not involved in the planning or setting of objectives for their own education, learning contracts (meant to codify the mutual agreement between instructor and student of how learning experiences will manifest) would be inappropriate. However, new instructors do receive training oriented toward adult education and its nuanced considerations. Instructors use their passive observations and direct feedback from graduates to assess student comprehension when adjusting curricula for future learners.

Students can influence lesson plans somewhat by providing their instructors with ad hoc feedback throughout the academic term. While the format of assignments is similarly predetermined, students can influence their modality of learning. In so doing, students directly influence their learning experiences.

Also, instructors build their plans on the foundational concept of Bloom's taxonomy; particularly, lesson plan designs use learning projects to spur students up the hierarchy of knowledge domains to higher order ones- typically Analysis, Synthesis, and Evaluation. Progression up the hierarchy manifests as progression through learning projects sequenced by their readiness to advance as evidenced by comprehension.

Therefore, because SNCOA faculty deliberately design learning plans in a manner that emulates Knowles' process element (despite a lack of direct student involvement and learning contracts), the authors decided that SNCOA somewhat includes adult learners in the creation of learning plans. Were it not for the incorporation of andragogical principles into the learning plans and the control students have over their learning experiences, this process element would be pedagogical by the authors' account.

7. Conducting Learning Activities

While independent study is not available at SNCOA, instructors use inquiry projects and experimental techniques to engage students. With the Socratic method of teaching (e.g., posing open-ended questions to students to generate critical thought) being a foundational teaching style at SNCOA, the normal observation is that students engage the material and draw from their lived experiences to contextualize the curriculum.

While the level of student engagement varies among instructors, input and feedback during the class development process ensures that learning activities are opportunities for inquiry into the curriculum, that their design is likely to be engaging in execution, and in some cases, that they are experimental. Teach backs, for instance, are a novel technique in use at SNCOA for some classes that generate- by necessity- significant student engagement. Most classes at SNCOA have an experimental exercise.

Faculty and students both reinforce the need for engagement through individual feedback. Instructors engage in ad hoc verbal feedback with disengaged students, and students have three scheduled opportunities to provide written feedback as well, though instructors can call for ad hoc feedback session as needed or desired. Notably, SNCOA students stratify the members in their class: that rating accounts for 32% of a student's final grade. Therefore, there is a direct incentive for students to be engaged at all times.

Because instructors apply andragogical principles to the development of learning activities and because student engagement is linked to their grade, the authors decided that SNCOA moderately engages its students. It does not do so ideally because learning planning- to include the planning of activities- does not incorporate student input.

8. Evaluating Learning Achievements

Informal assessments in each lesson are instructors' primary means of tracking comprehension throughout the academic cycle. Daily conversation and routine feedback sessions also inform both student and instructor. Feedback on graded assignments is not arbitrary; rather, SNCOA instructors must provide comprehensive, useful feedback to students regarding the strengths and weaknesses of their work. More importantly, the ways in which students receive evaluations are highly andragogical in that they involve students in the process. For example, half of the graded assignments are group assignments, so students receive meaningful feedback not just from their instructor but from their peers both in their group and in the class. This structuring makes evaluation nuanced and multidimensional. Students can also engage instructors at any time to discuss their grades.

Given students' access to meaningful evaluation and the fact that instructors and students share accountability for evaluating, the authors decided that SNCOA moderately employs andragogical evaluation procedures. It does not do so ideally for the lack of student involvement in designing the grading mechanism and relative weights of assignments, though that is one of Knowles's more controversial ideals.

9. Overall Assessment

The authors determined that SNCOA's educational procedures are moderately or ideally andragogical when SNCOA has control over the procedures. Instructors and faculty train in andragogy and are knowledgeable of adult learning concepts and methodologies. There is a heavy emphasis on appealing to students' engagement with curriculum, and student choice is promoted wherever possible. For those procedures that SNCOA cannot control (i.e., those that AU directs) the authors determined that the schoolhouse implementation of those procedures is nonetheless somewhat andragogical because the schoolhouse accounts for student input when adjusting their procedures. While it is impossible for SNCOA students to directly control these procedures (since it is equally impossible for SNCOA), that students can influence the shaping of those procedures is a somewhat andragogical manifestation of adult learning principles. The authors noted that because SNCOA offers a five-week program, it could be more challenging to instill a transformational educational experience than if the program were longer (e.g., one year at ACSC). Nonetheless, SNCOA well applies the principles of andragogy in educational procedures.

V. CONCLUSION

The rise of insider threat incidents has underscored security concerns within the military and renewed appreciation for the importance of CInT education. SecDef Austin's (2021) memorandum in response to the Capitol Hill riots called for recommendations for CInT education plans that target audiences at different leadership levels. The authors' first research question was: how does the USAF educate its command-level personnel with CInT curriculum? The authors found that there is a fault in the USAF's CInT program: despite overseeing unit-level CInT programs and training most USAF personnel, unit commanders and supervisors receive the same pedagogical training as their workforce. Furthermore, the nature of training they receive is unproductive to the USAF's aims: CInT awareness CBTs insufficiently fulfill the USAF's need for educated reporters, as evidenced by the confusions commanders have reported in identifying reportable behaviors (Austin 2021). A transformational CInT education curriculum is necessary.

The authors' second research question was: to what degree are the educational policies and procedures at these institutions adequate for educating emerging command-level personnel on a topic as complex as CInT? Through their analysis, the authors determined the schoolhouses' effectiveness at meeting educational needs and at applying andragogical principles to their educational procedures. Analysis of eight educational procedures at ACSC and SNCOA yielded ratings, demarcated along a continuum as: pedagogical, somewhat andragogical, moderately andragogical, or ideally andragogical. Table 2 lists the authors' ratings for both schoolhouses.

Table 2. Overall Ratings

Knowles's (2015) Model	**Rating ACSC**	**Rating SNCOA**
"Preparing adult learners for the program is for them to gain insight and understanding for what is to come."	Ideally Andragogical	Moderately Andragogical
"Setting the Learning Climate is for helping adult learners become comfortable, relaxed, trusting, mutually respectful, informal, warm, collaborative, supportive, open, authentic, human, pleasurable and fun."	Ideally Andragogical	Ideally Andragogical
"Planning the Learning Experience is to be mutually done by the learners and facilitators."	Somewhat Andragogical	Somewhat Andragogical
"Diagnosis of the Learner's Needs is assessed mutually by learners and facilitators."	Ideally Andragogical	Moderately Andragogical
"Setting the Learning Objectives are mutually negotiated by learners and facilitators."	Somewhat Andragogical	Somewhat Andragogical
"Designing the Learning Plans is through learning contracts, learning projects, and sequenced by readiness."	Somewhat Andragogical	Somewhat Andragogical
"Learning Activities are conducted through inquiry projects, independent study, and experiential techniques."	Moderately Andragogical	Moderately Andragogical
"Evaluation of the Learning is by learner collected evidence validated by peers, facilitators, and experts."	Moderately Andragogical	Moderately Andragogical

The authors found that for those procedures within the schoolhouses' control to design and execute, andragogy is at their core. Based on interview responses, the authors determined that where procedures were theirs to control, both ACSC and SNCOA moderately or ideally apply andragogical principles in their educational procedures. Adult learners have a high degree of autonomy and control over their educational experience at both schoolhouses. The near-identical ratings for the schoolhouses are a reasonable consequence of their subordination to AU, which directs and enforces educational standards for all its schoolhouses.

For those procedures the schoolhouses cannot control completely (i.e., planning the learning experience, setting learning objectives, and designing learning plans) the authors found that the procedures are not beyond students' influence. Given that student feedback at course and program's end influences the following academic cycle (particularly at ACSC, where students have more opportunities to provide feedback than at SNCOA and where that feedback carries significant weight), adult learners can affect these procedures-if not for their own direct benefit. Furthermore, the fact that these procedures are devoid of

direct collaboration between student and instructor is not a failing of the schoolhouse to adopt andragogical principles: quite the contrary, this lacking results from realistic, external constraints on the ideal application of theoretical andragogy. Congressional, CJCS, and USAF policies govern, among other things, the learning objectives, curricula, and criteria for attendance, eligibility, selection, and removal of students at ACSC and SNCOA. These constraints are both reasonable and necessary for the schoolhouses to meet their educational obligations and to develop students in a manner that the nation demands. It is not the position of the authors that the USAF should dismiss reasonable constraints for the sake of pursuing an ideal application of theory. Rather, it is the authors' opinion that the schoolhouses' determination to make every educational procedure as andragogical as able- despite external constraints- indicates that ACSC and SNCOA would proctor well even the most nuanced of curricula, such as CInT.

If the USAF intends for its command-level personnel to receive a proper CInT education, then it must devise or adopt a curriculum for that audience that relies on andragogical- not pedagogical- principles. CBTs, which are pedagogical training devices, do not produce educated command-level personnel with the skills needed to identify behavioral indicators of insider threat. As such, their continued misapplication to these groups will remain a hindrance to the USAF's CInT requirements. It is the authors' contention that command-level personnel must receive an andragogical CInT curriculum while at ACSC and SNCOA to ensure their education is effective.

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