



**ASSESSMENT OF THE CURRENT CULTURAL AWARENESS AND
TRAINING FOR THE AIR FORCE CONTINGENCY CONTRACTING**

OFFICER

THESIS

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AFIT/GRD/ENV/08-M07

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AFIT/GRD/ENV/08-M07

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FOR THE AIR FORCE CONTINGENCY CONTRACTING OFFICER

THESIS

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Abstract

This study examined the current cultural awareness of contracting officers and the effectiveness of cross-cultural training provided to contracting officers through the Defense Acquisition University (DAU), and their monthly training at the base level. Current training in culture is fairly limited – only 2 days of the 9 day course in contingency contracting is dedicated to cultural training. Nevertheless, a comparison of means of 38 students before and after the DAU CON 234 course showed a statistically significant increase in Cultural Intelligence (CQ) on the cognitive and behavioral dimensions, but not on the motivational dimension. In addition, contingency contracting self-efficacy increased, but not significantly. A comparison of the CQ of 99 graduates from CON 234 to 25 more experienced contracting officers from AFMC and ASC showed no significant difference in the mean scores on CQ. Due to small sample sizes, conclusions are limited, but the results do show promise in the DAU class effectiveness, but more research is needed to provide more conclusive evidence.

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ASSESSMENT OF THE CURRENT CULTURAL AWARENESS AND TRAINING FOR THE AIR FORCE CONTINGENCY CONTRACTING OFFICER

I. Introduction

Overview

The United States Air Force has been deploying military personnel in support of contingency operations over the past five years, mainly to the Middle East but also to other parts of the world. The sustained operations in the Middle East have been longer than any other operation since Vietnam. The continual deployments to Iraq and Afghanistan require that only contingency contracting officers (CCOs) deal with local businesses to procure the needs for all military operations. Interactions with local businesses means CCOs need to operate in a foreign culture. In order to achieve successful business contracts, CCOs must have a clear understanding of local culture and customs. Therefore, it is imperative that CCOs have effective cultural education and training prior to any deployment. This thesis will examine the current cultural training conducted for contingency contracting officers in the Air Force and investigate the cultural awareness and cultural intelligence of current CCOs in the Air Force.

Current Contingency Contracting Environment

The Air Force contracting field is made up of two primary areas: operational and systems contracting. Operational contracting focuses on the contracting actions at the “wing” or base level. Contracting personnel take care of procuring commodities, services, and construction requirements needed for the base. Systems contracting must work in partnership with acquisition personnel in fields that include development, production, and maintenance of systems. For example, aircraft, missiles, radar, weapons, and communications systems are some of the more visible programs in the Air Force.

Contingency contracting is a particular type of operational contracting conducted in deployed locations. According to the official Air Force Federal Acquisition Regulation Supplement (AFFARS) Appendix CC publication for Contingency Operational Contracting Support Program (COCSP), contingency is defined as:

“...an emergency, involving military forces, caused by natural disasters, terrorists, subversives, or required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response, and special procedures to ensure the safety and readiness of personnel, installations, and equipment. Contingency Contracting Officer (CCO) is a person with delegated contracting authority to enter into, administer, and terminate contracts on behalf of the Government in support of a local contingency, steady-state deployments, or other contingency operations. The CCO also acts as the primary business advisor to the deployed or on-scene commander” (AFFARS Library, 2007: Appendix CC-102).

Contracting officers in operational and systems assignments must be prepared to carry out Air Force contingency missions in the United States and all foreign locations. The majority of these missions require a contingency contracting officer (CCO) at the

location. Contingency Contracting Officers must procure any and all needs that the Air Force did not transport to the location. These procurements include transportation, billeting, construction, and services.

Currently, CCO assignments are mainly in Iraq and Afghanistan to support the war efforts there. There are also other assignments in the United States and around the world to aid conflicts or humanitarian efforts. A recent example of contingency contracting in the United States was the massive effort to aid in the reconstruction of areas damaged from Hurricane Katrina. In the *AF Contracting Strategic Plan for Fiscal Year 2006-2007 Version 1.1*, Charlie E. Williams, Jr., Deputy Assistant Secretary for Contracting and the Assistant Secretary for Acquisition, addressed contingency contracting officers as a “direct customer” in the contracting environment. The plan also states a “transformation to a more “expeditionary, agile, and innovative” contracting environment (3, 8).

Need for Research

As stated earlier, contingency contracting assignments are mainly in other countries. This forces CCOs to directly interact with foreign contractors to complete contracting actions. There are two current tools used to train contracting officers in the Air Force for contingency contracting. First is a 9-day Contingency Contracting (CON 234) course at the Defense Acquisition University (DAU). This is a two week in

resident course that teaches new contracting officers the basic tools and instructions for contingency contracting. The next tool is Contingency Contracting Officer (CCO) Training that is carried out at a contracting officer's unit. The training is mandatory for all active duty contracting officers. The training is conducted once or twice a month by the Unit Deployment Manager (UDM) of the contracting unit.

Today, there are around 1050 contracting officer personnel (64PX career code) and around 1170 enlisted contracting personnel (6CXXX career code) in the Air Force. In a November 20, 2007 Mission Ready Contracting Officer (MRCO) course briefing by Headquarters Air Force Material Command Contracting office (HQ AFMC/PK), there are 196 contracting deployment requirements around the world. That equals about 437 annual deployments by Air Force contracting personnel, a significant increase from 81 Air Force deployment requirements in 2001. The Air Force contracting field is currently critically tasked for operations around the world. These figures indicate that one fifth of the Air Force contracting force must conduct CCO missions annually, where mission success will depend on their successful interaction with individuals from different cultures.

The Air Force has recognized the importance of cultural expertise in the establishment of a new career field, the Regional Affairs Officer (RAO). Individuals selected to be RAO's are sent to school for two years to learn about the culture of the region they will be assigned to, to include language training. However, the vast majority of Air Force members who deploy to foreign locations receive much less cultural

education and training. The Army conducts advanced cultural training at the Joint Readiness Training Center (JRTC) in Fort Polk, Louisiana. The Army incorporates Iraqi expatriates to interact with officers in training scenarios in a three week course for combat brigades (Axe, 2006). General David Petraeus, Command General Multi-National Forces-Iraq, outlines a need for Army personnel to receive expert knowledge of the Iraqi culture and society in his counterinsurgency (COIN) strategy. The strategy also states “increasing and institutionalizing recent and ongoing efforts across the board in cultural understanding in formal military and non-military doctrine, education, and training” (Dilegge, 2007). While Army units have engaged in many long deployments in foreign countries, deployments to the Middle East present differences in cultural values that make cultural education and awareness more important than deployments to NATO countries. For example, differences in values between the United States and Saudi Arabia in the Persian Gulf War led to the isolation of American troops from the local inhabitants, a necessity considering the risk of cultural clashes and the potential for damage to the relationship between the US and its host country (McFarland, 2005)

Culture is made up of values, beliefs, traditions, and other human activities that make us who we are in different parts of the world. Previous research has identified several “dimensions” of culture, such as Individualism-Collectivism, Power Distance, Uncertainty Avoidance, and ranked nations on each dimension (Hofstede, 2006:2). Research has also revealed the significance of individuals completing cross-cultural training prior to conducting business with other foreign companies. This research will

investigate the cultural training given to contracting personnel and the extent to which it increases individuals' cultural awareness.

Research Objectives

The goal of the study is to evaluate the current Air Force contracting training techniques and determine if the training is effective for the contingency contracting officer to be successful in any foreign business environment. The research proposes to answer four objectives:

- 1) Determine what cultural education and training is provided to Air Force contracting personnel, especially prior to a deployment.
- 2) Measure the overall cultural awareness of Air Force contracting personnel.
- 3) Assess the effectiveness of cultural education and training used today on raising the level of cultural awareness in Air Force contracting personnel.
- 4) Investigate the potential use of various education and training tools developed to enhance cultural awareness and training for Air Force contracting personnel.

Scope

The Air Force conducts most CCO missions outside the United States in foreign countries. Therefore, the study will not include systems level contracting or stateside

contingency contracting missions. As already mentioned, the study will focus on cultural training techniques in the Air Force contracting field. It will also research cultural training methods conducted in different military services as well as institutions outside of the military. Consequently, the study will not concentrate on specific cultures and customs.

II: Literature Review

Overview of Culture

In order to understand the importance of cultural training, the first step is to recognize the concept of cultural dimensions. After a study with the IBM Corporation from 40 different offices around the world, Geert Hofstede “empirically” developed four cultural dimensions in 1980. The dimensions are “power distance (related to the problem of inequality), uncertainty avoidance (related to the problem of dealing with the unknown and unfamiliar), individualism-collectivism (related to the problem of interpersonal ties), and masculinity-femininity (related to emotional gender roles)” (Hofstede, 2006:2). Now the dimensional paradigms are used in the “normal science approach to cross-cultural business studies” (Hofstede, 2006:2).

Cross-cultural Training

Cross cultural interaction is a primary job requirement for a CCO. The definition for cross cultural interaction is “contacts between two or more people from different cultural backgrounds” (Black & Mendenhall, 1990:114). Black and Mendenhall stated three reasons why the study of cross-cultural training is important: “(a) the necessity of engaging in cross-cultural interaction are widespread, (b) the costs of unsuccessful interactions can be substantial, and (c) many firms seem to believe that cross-cultural training is not effective and that no empirical evidence exists that supports the efficacy of cross-cultural training”(Black & Mendenhall, 1990:114-115).

One important finding of the study was the significant relationship between cross-cultural training and performance in 11 of the 15 studies they reviewed that examined the relationship between cross-cultural training and performance. “Institutions that send individuals overseas or into a multicultural work setting expect those individuals to perform whether that involves building a dam...or negotiating a contract” (Black & Mendenhall, 1990:119).

The study indicated the majority of the past literatures did not compare the efficacy of training methods in a systematic approach (Black & Mendenhall, 1990:115). A main conclusion was that there was a lack of theoretical framework in the literatures to explain why cross-cultural training is effective (Black & Mendenhall, 1990:120). The authors also concluded that,

“Cross-cultural training enables the individual to learn both content and skills that will facilitate effective cross-cultural interaction by reducing misunderstandings and inappropriate behaviors. If this is accepted as the major objective of cross-cultural training, it becomes necessary to understand how people learn to appropriately interact with others and how they use that knowledge for effective interactions” (Black & Mendenhall, 1990:120).

The duration of a cross-cultural training program is a crucial determinant that companies must determine for employees who conduct business on international assignments. “Anything shorter than one day is simply an “overview” and typically offers little sustaining value” (Aston, Bennett, & Colquhoun, 2000:244). Currently the Air Force offers contracting officers a one hour lesson in cultural training at the Defense

Acquisition University's CON 234 course. Research indicates the "vast majority of companies today opt for two-to-three-day programs prior to departure" (as cited in Aston, Bennett, & Colquhoun, 2000:244).

Cultural Intelligence

Cultural intelligence (CQ) is defined as "an individual's capability to adapt effectively to situations of cultural diversity, as a potentially important predictor in intercultural negotiation contexts" (Early & Ang, 2003:4). Imai & Gelfand (2007) examined CQ in negotiating transcripts from 130 American and East Asian negotiators. They concluded that the most effective negotiations consist of "negotiators who have certain individual difference characteristics in overcoming the cognitive, motivational, and behavioral hurdles and are able to maintain sequencing of integrative behaviors" (Imai & Gelfand, 2007:2). Imai and Gelfand (2007) used a 20-item Cultural Intelligence Scale (Ang et al. in press) to assess the four factor structure that demonstrates meta-cognitive, cognitive, motivational, and behavioral aspects of the negotiations.

Cognitive CQ

Cultural intelligence can be a significant enhancement to training because CQ can identify and tailor for an individual's strengths and weaknesses (Earley & Peterson, 2004). The focus of this study will be on the cognitive, motivational, and behavior components of CQ. The meta-cognitive component will not be included since

metacognition determines the “knowledge and cognition about cognitive objects” (Earley & Peterson, 2004: 106). The cognitive aspect of CQ is the “total knowledge and experience concerning cultural adaptation of an individual stored in memory” (Earley & Peterson, 2004: 106). An individual with a high CQ will have an understanding of basic cultural information (Earley & Peterson, 2004). A contracting officer with a high cognitive CQ will study and be familiar with the specific culture that they will encounter on their contingency mission. This knowledge will lead the individual to be more confident in their dealings with individuals from that culture.

Hypothesis 1: Training will improve an individual’s cognitive CQ ability.

1a. Cognitive CQ will positively relate to contingency contracting self- efficacy.

Motivational CQ

An individual must be able to adapt and be self aware to produce the appropriate cultural response. This is known as the motivational aspect of CQ. Earley and Peterson deduct that “if the motivational facet of cultural intelligence is weak, adaptation does not occur” (2004:107). Motivational CQ emphasizes “the value of being interested and having the self-efficacy for intercultural interactions” (Imai & Gelfand, 2007:3). Therefore, a contracting officer with high motivational CQ is able to work efficiently through cultural encounters and have a positive mission impact.

Self-efficacy is one important aspect of motivational CQ. The definition of self-efficacy is “a judgment of one’s capability to accomplish a certain level of performance” (Bandura, 1986:391). Self-efficacy and goal setting are interdependent and together they present a better understanding of the motivational component of CQ (Earley & Peterson, 2004). Therefore, contracting officers who have a high motivational CQ will set goals prior to contingency contracting missions to ensure successful intercultural exchanges.

Hypothesis 2: Training will improve an individual’s motivational CQ ability.

2a. Motivational CQ will positively relate to contingency contracting self-efficacy.

Behavioral CQ

The third and final aspect of cultural intelligence that this study will focus on is the behavioral component. “Behavioral CQ refers to the individual’s appropriateness of both verbal and non-verbal behaviors in new cultures” (Imai & Gelfand, 2007:3). An individual with a high behavioral CQ can quickly adapt to another’s gestures to ensure a comfortable intercultural exchange. Each culture may require individuals to intelligently and sensibly imitate certain cultural traits which is a type of cognitive strategy and behavioral involvement (Earley & Peterson, 2004).

Therefore, a contingency contracting officer with a high behavioral CQ should know not to discuss business first with a contractor from Iraq, but instead to first converse about family or other topics that may be personal. Earley and Peterson conclude that “a high CQ person has an aptitude to determine where new behaviors are needed and how to execute them effectively” (2004: 108). A CCO’s first encounter with a new contractor is crucial to the success of the intercultural relationship. There may only be one or a few contractors in rural areas of the world that can support the contingency mission, which makes the first encounter that much more important.

Hypothesis 3: Training will improve an individual’s behavioral CQ ability.

Self-Efficacy

The very definition of self-efficacy relates to motivational cultural intelligence. Bandura states that “self-efficacy beliefs regulate human functioning through cognitive, motivational, affective, and decisional processes” (Bandura, 1997). Bandura and Locke investigated if beliefs of personal efficacy factor into human functions. Their research used nine meta-analyses to discover that “efficacy beliefs contribute significantly to the level of motivation and performance” (Bandura & Locke, 2003:87). The study applied different methodologies and analytical approaches. The approaches include,

“inter-individual experimental designs comparing groups raised to differential levels of perceived efficacy as well as intra-individual designs in which the same

individuals are progressively raised to higher perceived self-efficacy;...and varied domains of functioning and impact of self-efficacy on different response systems encompassing cognitive, affective, and behavioral expressions” (Bandura & Locke, 2003:87).

Bandura and Locke also cited an example of how social cognitive theory showed “efficacy beliefs predict occupational choices and level of mastery of educational requirements (Lent, Brown, & Larkin, 1984, 1986, 1987; Lent, Lopez, & Bieschke, 1993, as cited in Bandura & Locke, 2003:90). The finding demonstrates that an individuals’ self-efficacy can predict the level of effort used during times of training and education; and more importantly can predict if cultural training affects an individual’s self-efficacy. Self-efficacy is an effective predictor for this study when measuring in comparison to contracting officers’ cognitive and motivational cultural intelligence. Bandura and Locke also find (Lent et al.), “the greater is the interest they have in them, the better they prepare themselves educationally for different occupational careers” (Bandura and Locke, 2003:90).

Hypothesis 4: Training will improve an individuals’ Contingency Contracting Self-Efficacy.

Intercultural Training Design

The most significant conclusion from the Earley and Peterson research is to map CQ components with intercultural training demands. The design of the concept, illustrated in Figure 1, matches “specific training methods with a needs-based analysis of participant capability” that includes the intensity, duration and nature of the training created by Tan and Chua (2003) (Earley and Peterson, 2004:109).

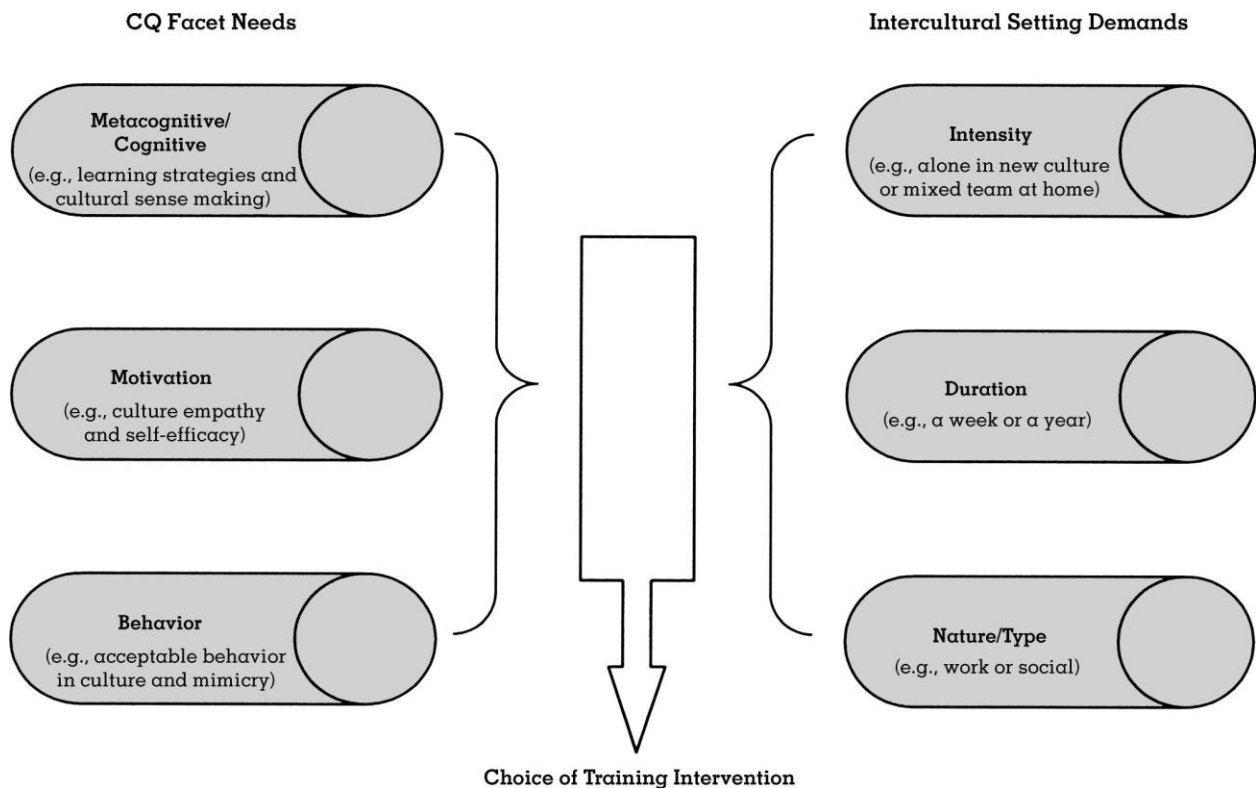


Figure 1 Designing an Intercultural Training, (from Earley & Peterson, 2004)

Now, an intervention (intercultural training) can be tailored to the individual’s strengths and weaknesses. It is critical to provide this intervention to a global manager or, for the

purposes of this study, a contracting officer, because there are many challenging tasks involved with intercultural business (Earley & Peterson, 2004).

Self-Monitoring

Self-monitoring (SM) is a widely used measure of personality for research (Briggs & Cheek, 1988). Snyder (1974) developed and defined self-monitoring “as self-observation and self-control guided by situational cues to social appropriateness” (as cited by Earley & Peterson, 2004:101). An individual typically makes an observation, then regulates the observation, and finally controls the *self* in a social setting (Day et al., 2002). Individuals can have positive or negative attitudes towards themselves. The assessments can potentially predict the need for cultural adjustments and interactions (Earley & Peterson, 2004).

In previous studies it was found that a “high self-monitor tend to monitor and control the images that they present to better fit with the social climate around them. Low self-monitors tend to be true to themselves and display more consistent behavior across various social contexts” (Day et al., 2002:390). The original 25-item SM Scale was developed by Snyder in 1974 and then it was condensed to 18-items in 1985 by Gangestad and Snyder (as cited by Day et al., 2002). The scale can be revised to meet the specifications of each study. Most importantly, the success of the scale indicates a “construct of theoretical and applied interest” (Day et al., 2002:390). Self-monitoring is a relevant instrument that can predict attitude, behavior, and outcome of an individual.

Hypothesis 5: Cultural intelligence will be positively related to self-monitoring.

5a. Cognitive CQ will positively relate to self-monitoring.

5b. Behavioral CQ will positively relate to self-monitoring.

Openness to Experience

The five-factor model of personality also known as the “Big Five” is the most commonly and relevant instrument used to measure the different facets of personality (Bono et al., 2002). Norman (1963) and Tupes (1961) were the first researchers credited in using the Big Five. The five-factor components are Neuroticism, Extraversion, and Openness to Experience, Agreeableness, and Conscientiousness. More importantly, in 1997, McCrae and Costa established the use of the five-factor model in cross-cultural studies (as cited by Bono et al., 2002).

This study will focus on Openness to Experience (OTE) since it “is the disposition to be imaginative, nonconforming, unconventional, and autonomous” (Bono et al., 2002:767). The other factors from the Big Five will not be used since the research already addressed components of cultural intelligence. Openness to Experience also indicates “measures of creativity” which relate to aspects of learning and adapting to culture (Bono et al., 2002:768). Past research found the Big Five traits “to be relevant to many aspects of life...one of the most popular applications of the five-factor model has been to the area of job performance” (Bono et al., 2002:767). Ang et al., (2006), found openness to experience to be significantly positively related to all four factors of CQ.

This study will apply Openness to Experience to determine if it can predict intercultural training performance.

Hypothesis 6: Cultural intelligence will positively correlate with Openness to Experience. Contracting officers who believe they are culturally aware are more likely to be open to new cultures and experiences.

6a. Cognitive CQ will positively relate to openness to experience.

6b. Motivational CQ will positively relate to openness to experience.

6c. Behavioral CQ will positively relate to openness to experience.

CON 234 Cross-cultural training

The CON 234 course at the Defense Acquisition University (DAU) is a 9-day course intended to train and develop skills in contingency contracting to support Joint forces in all military operations (DAU catalog, 2008). On the second day of training, instructors teach a one module cross-cultural awareness presentation. The module is intended to last for one hour. The two lesson objectives are to: “(a) Compare and contrast US values with other world views and explain how world views affect US relations and (b) Discuss awareness to “culture” as it affects behavior, perspective and the ability to function in a dissimilar culture” (CON 234 PowerPoint Presentation, 2007:Slide 2).

The cross-cultural module discusses values, enculturation, ethnocentrism, collective culture, culture, xenophobia, culture shock, and empathy (CON 234 PowerPoint Presentation, 2007). The final conclusions from the module are: “(a) Culture

is the body of shared values, (b) Learned behavior is transmitted from generation to generation, and (c) Awareness of and adaptation to cultural differences can greatly enhance relations with your host country and your ability to accomplish the mission” (CON 234 2008 PowerPoint Presentation, 2007:Slide 25). The module does not tailor an intercultural intervention for the individuals at the training, but instead develops a basic foundation of cognitive cultural intelligence.

III: Methodology

Overview

Contingency contracting objectives are outlined in the Defense Acquisition University CON 234 course description (DAU Catalog, 2008) and AFFARS Appendix CC(AFFARS Library, 2007: Appendix CC). The study used several instruments to measure contracting officers' cultural awareness and the current effectiveness of training conducted for contingency contracting. The instruments were cultural intelligence (CQ), self-efficacy, self monitoring, and openness to experience.

Surveys

Two surveys were used for the CON 234 course at the DAU location in Kettering, Ohio. The goal was to assess individual's personalities using the above mentioned instruments prior to the start of the course and after the completion of the course. The study was granted permission to survey three CON 234 classes.

The students at CON 234 come from a wide range of demographics. Primarily, students were new Air Force members in the contracting career field (6C031 and 64P1) from both the enlisted and officer sides. Other military services including Army, Navy, and Marines send military personnel to CON 234. However, contracting is not the primary career for these service members, both enlisted and officer. Officers will generally have at least a few years of military experience. Enlisted personnel will primarily be senior enlisted with a number of years of military experience. Services other

than the Air Force only grant military personnel in the contracting field as a career broadening experience.

A third survey was used for current contracting personnel in different organizations at Wright-Patterson Air Force Base, Ohio. The organizations included Air Force Material Command (AFMC/PK) Headquarters Contracting, 88th Contracting Squadron (88 CONS/PK), and the Aeronautical Systems Center (ASC/PK). The majority of the third survey was given during the CCO training sessions at 88 CONS. These sessions included attendance from both 88 CONS and ASC military contracting personnel. Individuals from these organizations were primarily Air Force military contracting personnel. There was a broad range of contracting experience from both the enlisted and officer personnel.

The surveys did not specifically identify individuals, but rather gathered general information to determine certain experiences. These demographics included rank, years in the contracting career field, military branch, years in the military, Acquisition Professional Development Program (APDP) contracting level certification, number of deployments, and duty title. The number of deployments will be an important demographic since the study cannot survey individuals from CON 234 after they return from a future deployment.

Cultural Intelligence Scale

The following Cultural Intelligence Scale (CQS) (*Ang et al. in press*) was used to measure cultural intelligence for the pre and post CON 234 survey and the CCO training

survey. As previously stated mega-cognitive CQ will not be used for the purposes of this study. All items are measured on the scale from (1) “strongly disagree” to (7) “strongly agree.” Alpha denotes reliability for each scale, while “n” denotes the number of respondents for each scale.

Cognitive CQ (alpha = .86 time 1; and .87 at time 2 including CCOs training surveys, n = 99)

I know the legal and economic systems of other cultures.
I know the religious beliefs of other cultures.
I know the marriage systems of other cultures.
I know the arts and crafts of other cultures.
I know the rules (e.g., grammar) of other languages.
I know the rules for expressing non-verbal behaviors in other cultures.

Motivational CQ (alpha = .92 at time 1(n = 36), and .85 at time 2 including CCOs, n = 99)

I enjoy interacting with people from different cultures.
I enjoy living in cultures that are unfamiliar to me.
I am confident that I can socialize with locals in a culture that is unfamiliar to me.
I am confident that I can get accustomed to the shopping conditions in a different culture.
I am sure I can deal with the stresses of adjusting to a culture that is new to me.

Behavioral CQ (alpha = .84 at time 1, and .84 at time 2 including CCOs, n = 99)

I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.
I change my non-verbal behavior when a cross-cultural situation requires it.
I use pause and silence differently to suit different cross-cultural situations.
I vary the rate of my speaking when a cross-cultural situation requires it.
I alter my facial expressions when a cross-cultural interaction requires it.

Self-Monitoring

An 8-item self-monitoring scale was used in the CON 234 pre-course survey and the CCO training survey (Lennox & Wolfe, 1984). All items are measured on the scale from (1) “certainly always false” to (6) “certainly always true.” The reliability (alpha) is 0.84 for all 8 items with a sample size of 84.

Once I know what the situation calls for, it's easy for me to regulate my actions accordingly.
If someone is lying to me, I usually know it at once from that person's manner of expression.
I have found that I can adjust my behavior to meet the requirements of any situation I find myself in.
I can usually tell when I've said something inappropriate by reading the listener's eyes.
In social situations, I have the ability to alter my behavior if I feel that something else is called for.
My powers of intuition are quite good when it comes to understanding others' emotions and motives.
I have the ability to control the way I come across to people, depending on the impression I wish to give them.
I am often able to read people's true emotions correctly through their eyes.

Contingency Contracting Self-Efficacy

A 6-item contingency contracting self-efficacy scale was developed and used for the pre and post course CON 234 surveys and the CCO training survey. All items were measured on the scale from (1) “strongly disagree” to (7) “strongly agree.” The scale focuses on the self-efficacy components specifically involved in contingency contracting. It was developed for the specific setting, using wording similar to items that Chen et al., (2001) used for generalized self-efficacy. The reliability (alpha) is 0.79 for all 6 items in the contingency contracting self-efficacy scale.

I don't think the contingency contracting duties are too difficult.
I am confident of my ability to perform contingency contracting.
No matter what duties I am given in contingency contracting, I believe I will succeed.
When faced with difficult tasks in contingency contracting, I am certain that I will accomplish them.
I am confident that I can perform effectively on contingency contracting tasks.
I will be able to achieve my goals as a contracting officer/employee in a contingency environment.

Openness to Experience

A 10-item Openness to Experience scale was used in the CON 234 pre-course survey and the CCO training survey. All items were measured on the scale from (1) “very inaccurate” to (5) “very accurate.” The 10-item International Personality Item Pool (IPIP) openness to experience scale was used for the purposes of this study. The

reliability (alpha) was 0.58 for all 10-items which does not meet the minimum criteria for reliability. After removing 5 of the 10 items, the reliability increased to 0.70, an acceptable number for reliability.

+ keyed	– keyed
Believe in the importance of art.	Am not interested in abstract ideas.
Have a vivid imagination.	Do not like art.
Tend to vote for liberal political candidates.	Avoid philosophical discussions.
Enjoy hearing new ideas.	Do not enjoy going to art museums.
Carry the conversation to a higher level.	Tend to vote for conservative political candidates.

IV. Results

Descriptive Statistics

CON 234 Survey

A descriptive analysis of the CON 234 data included means, standard deviations (σ^2), sample size (n), t-value, and significance level (p) from time one and time two.

CCO Training Survey

An analysis of the mean was completed from CCO training survey data. Specifically, the mean was analyzed from the three components (cognitive, motivational, and behavioral) of cultural intelligence.

Mean Values

The mean values for respondents were measured for the constructs at time one and time two of the CON 234 course. A paired sample t-test was conducted on contingency contracting self-efficacy and the three cultural intelligence components from Time 1 and Time 2 (Table 1). All the means were higher at Time 2, but only the CQ cognitive and CQ behavioral were significantly higher statistically.

Correlation Test

A correlation test was conducted on the overall cultural intelligence at Time 2, the overall self-monitoring, and overall openness to experience (OTE). Also included in the correlation are the CQ cognitive, CQ motivational, CQ behavioral, and the contingency contracting self-efficacy at Time 1 and Time 2 (Table 2).

	Mean	N	Std. Deviation	T value
CCSE1	5.83	36	.93	1.77
CCSE2	6.03	36	.90	
CQ_cog1	3.89	38	.96	6.30***
CQ_cog2	4.68	38	.95	
CQ_mot1	5.48	38	1.0	1.74
CQ_mot2	5.64	38	.85	
CQ_beh1	4.94	38	.93	2.99**
CQ_beh2	5.25	38	.74	

Note: ** = $p < .01$; *** = $p < .001$

Table 1: Paired t-test Results for CQ and CCSE.

	CQ_cog1	CQ_mot1	CQ_beh1	CQ_cog2	CQ_mot2	CQ_beh2	CCSE1	CCSE2	OTE	SM	APDP	Yrs_in_Mil	Yrs_in_Contract
CQ_cog1	1.000												
CQ_mot1	.628**	1.000											
CQ_beh1	.636**	.698**	1.000										
CQ_cog2	.680**	.456**	.577**	1.000									
CQ_mot2	.569**	.828**	.625**	.539**	1.000								
CQ_beh2	.676**	.560**	.731**	.637**	.669**	1.000							
CCSE1	.113	.269	.222	.158	.378*	.298	1.000						
CCSE2	.377*	.476**	.193	.256*	.467**	.356**	.741**	1.000					
OTE	.208	.318*	.225	.241	.222	.150	.204	.186	1.000				
SM	.358*	.417**	.451**	.276*	.383**	.374**	.324*	.230	.193	1.000			
APDP	.211	.091	.098	.111	.104	.147	.271	.310**	.016	.213	1.000		
Yrs_in_Mil	.007	-.021	.087	-.167	-.076	.115	.238	.166	.006	.148	.386**	1.000	
Yrs_in_Contract	-.096	-.047	.024	-.117	.014	-.011	.232	.050	-.040	.075	.465**	.517**	1.000

**Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

CCSE = Contingency Contracting Self-Efficacy; OTE = Openness to Experience; SM = Self Monitoring

Table 2: Correlation Results

H1: Training will improve an individual's cognitive CQ ability. *Supported*

Mean cognitive CQ did increase from Time 1, 3.89 ($\sigma^2 = .96$) to 4.68 at Time 2 ($\sigma^2 = .95$). The p-value was less than 0.001 which shows great significance. The increase in mean and high significance demonstrates great success in increasing a contracting officers' cognitive CQ as a result of CON 234.

H1a: Cognitive CQ will positively relate to self-efficacy. Supported.

There was no correlation at time 1 between cognitive CQ & CCSE1 $r = .113$ ($p = .43$) and $N=50$. However, after the completion of CON 234, there was a positive correlation at CQ Cog2 & CCSE2 $r = .256$ ($p = .011$) and $N=97$. This shows a significant finding that after CON 234 training, contracting officers are more confident in completing their CCO duties with the cultural education taught at CON 234.

H2: Training will improve an individual's motivational CQ ability. *Rejected*.

Mean motivational CQ did increase from Time 1, 5.48 ($\sigma^2 = .99$) to 5.64 at Time 2 ($\sigma^2 = .85$). The p-value was 0.091 which shows slight significance, but did not meet the $p = .05$ significance level cutoff. However, the increase in mean demonstrates some success in increasing a contracting officers' motivational CQ as a result of CON 234.

H2a: Motivational CQ will positively relate to contingency contracting self-efficacy. Supported.

There was no correlation at time one of motivational CQ & CCSE, $r = 0.269$ ($p = .06$) and $N=50$. After completion of CON 234, there was a positive correlation at CQ Mot2 & CCSE2 $r = 0.467$ ($p = .0001$) and $N=97$. This shows a significant finding that

after CON 234 training, contracting officers are more interested in cross-cultural interactions and are more likely to set personal goals prior to deployment.

H3: Training will improve an individual's behavioral CQ ability. *Supported.*

Mean behavioral CQ did increase from Time 1 4.94 ($\sigma^2 = .93$) to 5.25 at Time 2 ($\sigma^2 = .74$). The p-value was 0.005 which shows great significance. The increase in mean and high significance demonstrates great success in increasing a contracting officers' behavioral CQ as a result of CON 234.

H4: Training will improve an individuals' Contingency Contracting Self-Efficacy. *Rejected.*

Mean CCSE did increase from Time 1, 5.83 ($\sigma^2 = .93$) to 6.03 at Time 2 ($\sigma^2 = .90$). However the t-value of 1.77 ($p = .085$) did not show a significance at $\alpha \leq .05$. However the increase in mean demonstrates some success in contingency contracting self-efficacy as a result of CON 234.

H5: Cultural intelligence will be positively related to self-monitoring. *Supported.*

The combination Cognitive CQ and Behavioral CQ support the idea that contracting personnel use cultural knowledge to act appropriately in different cultural situations.

H5a: Cognitive CQ will positively relate to self-monitoring. Supported.

There was a positive correlation between cognitive CQ and self-monitoring at both time one ($r = .358, p < .05$) and time two ($r = .276, p < .05$).

H5b: Behavioral CQ will positively relate to self-monitoring. Supported.

There was a positive correlation between behavioral CQ and self-monitoring at both time one ($r = .451, p < .01$) and time two ($r = .374, p < .01$).

H6: Cultural intelligence will positively correlate with Openness to Experience.

Generally, a contracting officer's cultural knowledge was not found to be correlated with their openness to experience.

H6a: Cognitive CQ will positively relate to openness to experience. Rejected.

There was no significant correlation between cognitive CQ and OTE at time one ($r = .208, ns$) or time two ($r = .241, ns$).

H6b: Motivational CQ will positively relate to openness to experience. Partially Supported.

There was a positive correlation between motivational CQ and Openness to Experience at time 1 ($r = .318, p < .05$), but not at time 2 ($r = .222, ns$).

H6c: Behavioral CQ will positively relate to openness to experience. Rejected.

There was no significant correlation between behavioral CQ and Openness to Experience at time 1 ($r = .225, ns$), or at time 2 ($r = .150, ns$).

V. Conclusion

Discussion

Four research questions were posted in Chapter I. The first question was “to determine what cultural education and training is provided to Air Force contracting personnel, especially prior to a deployment”, was answered by researching cross-cultural awareness module in the CON 234 course and comparing it with other cross-cultural training literature. The CON 234 lesson modules revealed only two lesson objectives in the entire nine day course for cross-cultural training. Most of the course is focused on contracting duties, which is the main objective of the course, and thus appropriate. However, that may leave a void in the area of cultural knowledge and awareness, which may be difficult to adequately cover in a short amount of time.

The second question was to “measure the overall cultural awareness of Air Force contracting personnel”, and it was answered by surveying contracting officers on their level of CQ. Of the three dimensions of CQ measured at time one, cognitive CQ was the lowest (3.88), followed by behavioral CQ (4.86) and motivational CQ (5.43) respectively. At time two, cognitive CQ improved to 4.64, followed by behavioral CQ (5.42) and motivational CQ (5.68). Since these scales were from 1 to 7, the means indicate that contracting officers have a fairly high level of CQ, at least from their own reports.

The third questions was to “assess the effectiveness of cultural education and training used today on raising the level of cultural awareness in Air Force contracting

personnel”, was answered by comparing the mean results and the correlation analysis. Eight out of thirteen hypotheses proposed were supported after analysis. Although improvement did occur between time 1 and time 2, how ingrained those lessons were, and whether they actually would transfer to the deployed environment, is as yet unknown. Student’s own perceptions indicated that their knowledge of culture increased, but whether that would translate to changed motivation and behavior would be better measured in the future. Another significant finding is the CQ of contracting officers at AFMC and ASC closely matches the CQ of CON 234 students after completion of their training. This would seem to indicate that the DAU class is effective, at least in the short term, of providing graduates with an increased cultural awareness, and equal to that of COs who have more experience. Again, the question still remains as to whether that knowledge and behavioral intent would last over time.

The fourth question was to “investigate the potential use of various education and training tools developed to enhance cultural awareness and training for Air Force contracting personnel”, was answered by the “Designing an Intercultural Training” model that tailors intercultural training for individuals (Earley and Peterson, 2004: Figure 1). Contracting personnel do not receive tailored cultural training that could potentially indicate individuals’ cultural strengths and weaknesses prior to cross-cultural situations.

Limitations

As with all research, there are a few limitations that limit the conclusions that can be drawn. First, all the data from the surveys were self-reports from contracting personnel. The analysis was not conducted by an outside observer, to assess the extent to which the students CQ ability changed. Second, a longitudinal measurement of CON 234 students could not be completed to observe the changes after their first deployment after the training due to time restrictions. Third, the CON 234 surveys were only conducted at the DAU Kettering location. Other DAU locations with different instructors (Huntsville, AL and Fort Belvoir, VA) could have an influence on the students' cultural education and overall lesson objectives.

Recommendations

There are a few recommendations that result from this study: 1) Further research using the surveys from this study should be conducted at CON 234 classes at all DAU locations. More responses will produce better data from which more rigorous analysis could be done, such as regression analysis. 2) The introduction of a tailored intercultural training tool should also be introduced and analyzed for improving individual's CQ. 3) Survey more contracting officers across the AF Major Commands and other military services to determine if individuals' cultural intelligence is similar to those researched at Wright Patterson Air Force Base.

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