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PROFESSIONAL CONTRACTING CERTIFICATION: AN EXAMINATION AND MODEL DEVELOPMENT

Thesis

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PROFESSIONAL CONTRACTING CERTIFICATION:

AN EXAMINATION AND MODEL DEVELOPMENT

THESIS

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Abstract

This study compared the elements of two existing contracting certification programs to an ideal contracting certification model developed by a panel of experts. The expert panel, as identified by the research team, responded to an open-ended electronic interview to convey their ideas regarding the individual elements for the model (experience requirements, education requirements, etc.). Input received from the initial interviews was used to develop a survey for the panel members. The surveys were completed and results were recorded and conveyed back to the panel members. This process was repeated until a majority consensus was reached on each individual element of the model, resulting in the ideal certification model. The final model contained elements of both the APDP and NCMA certification programs. There were no unique characteristics identified by the expert panel. Following model development, stakeholder assessment surveys were utilized to gain insight from the contracting field as to how the ideal model was perceived when compared with the existing certification programs. Stakeholder assessment of the model varied according to each individual element contained in the model.

The impact of this study was aimed at ensuring that certified contracting professionals possess the levels of education, experience, and contracting knowledge commensurate with their certification level. Potential deficiencies in the existing certification programs were identified and recommendations were made to both NCMA and senior government contracting personnel for potential improvements in both programs.

PROFESSIONAL CONTRACTING CERTIFICATION: AN EXAMINATION AND MODEL DEVELOPMENT

I. Introduction

Background

In accordance with the Defense Acquisition Workforce Improvement Act (DAWIA) of 1990, Air Force contracting personnel are currently required to possess a level of certification commensurate with their grade and position in order to continue career progression in the contracting field. Mandatory certification requirements are presently governed by the Acquisition Professional Development Program (APDP), as instituted by DAWIA. This three tier system of contracting certification requires individuals to possess certain levels of education, job experience, and various Defense Acquisition University (DAU) sponsored contracting courses.

The National Contract Management Association (NCMA) also sponsors a certification program. Although not presently required for government personnel, the NCMA certification program offers two levels of contracting certifications in addition to a Simplified Acquisition Specialist credential. The requirements for certifications are similar to the government sponsored APDP program in that a certain level of education, job experience, and at least two contracting courses are required before an individual can apply for certification. In addition, perhaps the biggest difference between NCMA and APDP certifications is that NCMA requires the successful completion of a

comprehensive examination prior to granting either level of certification. Furthermore, re-certification is mandatory every five years in order for an individual to maintain the desired level of certification.

Problem Statement

The problem statement of this thesis proposal recognizes that there are two certification programs in existence which seek to accomplish the same basic objective—to ensure that the contracting community has a qualified, knowledgeable, and experienced personnel corps. This thesis will seek to construct an ideal certification system that can be used as a baseline in assessing each of the existing systems. The research team envisions such a certification system to make clear distinctions between certification levels based upon education, experience, and contracting knowledge as determined by highly experienced contracting experts. This study is aimed at ensuring that certified contracting professionals possess the levels of education, experience, and contracting knowledge commensurate with their certification level.

Research Objectives

This research had three primary objectives:

1. Identify the qualifications necessary for government contracting personnel to attain professional levels of certification.
2. Formulate a model to reflect these findings.
3. Compare this model against existing certification programs to identify areas in which existing certification programs can be improved.

Research Questions

In accomplishing the above stated objectives, the research team intends to provide answers to the following questions:

1. How many levels of certification should an ideal contracting certification program contain?
2. What should be the education and experience requirements for contracting personnel to attain certification?
3. Should the successful completion of a comprehensive examination be required for contracting personnel to attain certification?
4. Should certified contracting personnel be subject to re-certification throughout their contracting career?
5. What aspects of the ideal certification program are unique to existing contracting certification programs?

By identifying any potential deficiencies in the existing certification programs, recommendations can be made to both NCMA and senior government contracting personnel for improvement in either or both contracting certification programs. This will potentially lead to a more qualified contracting field in both the public and private sector.

Furthermore, by developing an ideal contracting certification model based upon the inputs of an expert panel, the importance of each certification element (experience, formal training, education) can be determined and then compared with each of the existing programs. For example, the ideal certification model may require a more stringent education requirement but a relaxed experience requirement for each level of certification when compared with the existing programs. In this event, a potential

discrepancy could be identified between the current requirements for certification and the requirements that contracting experts feel are necessary to maintain and promote a qualified workforce. As a result of this study, recommendations can be made to the existing contracting certification programs to potentially enhance the certification process and ensure a qualified contracting workforce in both the public and private sectors.

The results of this study were expected to be useful in identifying the qualifications that contracting personnel should possess prior to being granted certification. The results may support present contracting certification programs, such as APDP or NCMA, or they may recommend some potential improvements to either or both of these programs. Either way, by gaining insight into the opinions of senior contracting experts, this study can identify the qualifications that certified contracting personnel should exhibit.

Definition of Terms

The following key terms are defined as they relate to this thesis effort.

1. Certification: A formal declaration that a person possesses the required knowledge, skills, and experience to be recognized as proficient in their field.
2. Contracting Certification Program: A system, within the contracting profession, comprised of various levels of certification, in which each level encompasses increased requirements on knowledge, skills, and experience.
3. Contracting Officer: An individual within the contracting profession with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings (FAR, 1998).

4. Contracting Personnel: Personnel whose primary occupation is that of government contracting (i.e., 1102 GS series, 64P officer AFSC). These personnel may or may not be titled as "contracting officer".
5. Consensus: A measure of majority agreement on survey or interview responses.
6. Delphi: A procedure for soliciting, collating, and refining expert opinions of a group to arrive at an accurate group response (Brown, 1968).
7. Expert (contracting): A senior civilian or senior officer with at least fifteen years of contracting experience and is either presently, or has in the past, supervised contracting personnel.
8. Qualifications: The prerequisites one must hold in order to be eligible for certification. Qualifications can be in terms of educational requirements, job experience, knowledge base, or other factors deemed necessary for certification.
9. Senior Civilian: An employee of the U.S. Government in the grade of GS-14 or higher, including the Senior Executive Service (SES).
10. Senior Officer: A member of the Armed Forces presently serving in the grade of O-6 (colonel) or above.

Scope

Although the area of contracting certification applies across the entire Department of Defense, this research was primarily conducted based upon the expert opinion and experiences of Air Force personnel. The research team has incorporated experts from the Army and Navy into the expert panel; however, the representation of the various military

branches is by no means proportionate with that of the DoD-wide contracting career field. The time constraints of this research effort and the availability of cross-service experts restricted the size of the panel and the diversity of contracting backgrounds. This research is qualitative and exploratory in nature rather than quantitative. For this reason, the expert panel was not randomly selected, but was specifically chosen by the research team to obtain the opinions of the most knowledgeable and experienced contracting experts possible, given such resource constraints as research time, limited funding, travel restrictions, and the availability of qualified panel participants. The research team viewed this approach, and the results obtained herein, to be reasonable and valid.

The next section contains the literature review. It discusses the importance of professional certification as well as existing research in this area followed by a description of the requirements for existing contracting certification programs. Following the literature review, we discuss the methodology employed to implement our research. Specifically, this section will discuss how the research team employed the Delphi technique in the development of an ideal contracting certification model. It also reports the results, as determined by the expert panel, of the formulation for the ideal contracting certification model. We then discuss analysis of the stakeholders assessment and conclude with a summary of our findings, recommendations, and suggestions for further research.

II. Literature Review

This literature review will identify the importance of professional certification in general, identify properties and characteristics that are common across well accepted professional certification programs, examine existing professional certification programs in contracting, and explain the exact requirements for certification in the Acquisition Professional Development Program and National Contract Management Association. Following a review of contracting related certifications, we will then conduct a brief review of certification programs from other professions. The chapter ends with a brief comparison of the existing certification programs to other programs.

Professional Certification

Certification has as its primary goal the promotion of competencies (Wiley, 1995). It establishes an accepted minimum level of competence within a profession and ensures that persons in a particular field are adequately qualified to practice a profession. A study conducted in 1980 reported that professional competencies improved in 54% of the organizations studied as a direct result of their certification efforts (Bratton and Hildebrand, 1980). Certification programs allow practitioners in fields such as accounting, medicine, law, and contracting to demonstrate a particular level of knowledge and/or experience in a chosen field (Wiley, 1995). An effective certification program can inform both employers and applicants about what training and skills are most fundamental to good practice, and it can differentiate these from related but secondary credentials such as personal traits and characteristics which may be beneficial to a profession (Imrey, 1994).

Another goal of certification programs is the overall improvement of the profession. Achievement of a standardized level of certification ensures a profession that its members are competent. "Certification requires that the sponsoring association be postured to limit incompetent practitioners or to improve performance by establishing competency standards" (Wiley, 1995: 272). More importantly, certification is tangible evidence that a person has met minimal performance standards, possesses requisite education and experience, and has demonstrated the skills to perform in the profession (Wiley, 1995). Certification provides evidence to others that a professional standard has been established.

Many established professions have developed certification programs to ensure the integrity of their professions. Professional associations administer the programs that typically consist of a combination of educational and experience requirements as well as the successful completion of a comprehensive examination or series of examinations. After initial certification, many programs possess continuing education requirements to ensure that an individual remains current in his or her field of expertise.

As previously stated, the first goal in the development of an effective certification program involves establishing an accepted minimum level of competence within a profession. A true profession must legitimate not only what it does, but also how it is done (Abbott, 1988: 189). An effective certification program will ensure those outside the profession that work performed in a profession is done in a competent, efficient, manner.

Certification at the individual level is a process by which individuals can achieve professional recognition for professional knowledge and achievement, whether or not

accompanied by a degree (Imrey, 1994). Individual benefits of certification include a mastery of the profession's body of knowledge, public recognition, currency, career advancement, pay incentives, and a professional attitude (Wiley, 1995). The most important long-run benefits of certification may be attained through any voluntary program that is technically sound, fairly administered, recognizes the breadth and diversity of a profession, and asserts the profession's commitments to quality (Imrey, 1994).

Examples of Professional Certification Programs

Three well-known certification programs are those for public accounting, medical licensing, and the legal profession. In this next section we review the requirements of these three systems to gain a better understanding of how others have attempts to meet the goals of certification programs. We also review the certification programs of a similar field to contracting – the National Association of Purchasing.

The recognized standard in the public accounting profession is the Certified Public Accountant (CPA) certification. In order to legally practice public accounting, individuals must possess a license. To become licensed, they must first possess a CPA certificate. All candidates for the CPA certification must pass the Uniform CPA Examination that is administered by the American Institute of Certified Public Accountants. In addition, each state has its own set of education, experience, and other requirements that individuals must meet.

Education requirements of most states mandate at least a bachelor's degree in accounting with some requiring a minimum of 150 hours of study. A minority of states require individuals to possess a master's degree.

Experience requirements vary widely. Most states require at least two years public accounting experience. Some accept non-public accounting experience. However, these states typically require more years of experience.

Some states have implemented a tiered system for certification and licensing. States with a one-tiered system require candidates to pass the CPA examination and fulfill the experience requirements to obtain both the certificate and license. Two-tiered systems grant the certification upon completion of the exam, but withhold licenses until experience requirements have been met.

In conjunction with education and experience requirements, states issue general qualifications such as age, citizenship, and residency. The most common age requirement is that candidates be 18 years of age. However, a few states require candidates to be at least 21 years of age and some states have no age requirements at all. The vast majority of states do not require citizenship but do require residency in that respective state (AICPA homepage, 11 Feb 99).

Similar to public accounting, medical licensing requirements vary according to state. The Federation of State Medical Boards and the National Board of Medical Examiners jointly sponsor the United States Medical Licensing Examination (USMLE) for medical licensing. In order to take the USMLE, applicants must have graduated from an accredited school of medicine. The USMLE is a three-step examination, each of which must be completed in sequence. Upon successful completion of this examination, applicants must apply to a state's board of medical licensing to receive a medical license.

Certification to practice law also varies by state. Each state requires that individuals pass a state's bar examination that is composed of a multiple-choice multi-state section

and an essay section tailored to the state in which it is taken. A prerequisite for this exam is the education requirement that applicants possess a juris doctorate degree from an accredited school of law. Successful completion of the examination will allow individuals to apply to a state's board of bar examiners to obtain a license to practice in that state. Each state's board of bar examiners has various other requirements that will be considered in determining whether or not to issue a license. These requirements range from character witness statements to Federal Bureau of Investigation background checks and fingerprinting.

To maintain a license to practice law, attorneys are required to earn continuing legal education credits over an expressed period of time as determined by each state. In general, the requirements range from ten to sixteen hours annually with at least three hours in ethics-related training. The research team found no evidence of experience requirements prior to licensing.

It is evident from the research team's review of certification programs that a number of general characteristics are common to all programs. Certification programs require some level of fundamental education, related experience, and demonstrated success on a comprehensive examination. We will see later in this section that both the APDP and NCMA contracting certification programs have many of these same elements.

Professional Purchasing Certifications

This section discusses the existing certification programs available in the field of purchasing. It is important to note that while certain aspects of purchasing and contracting are the same, the certification programs discussed below are not substitutes for the previously discussed contracting certification programs of NCMA and APDP.

Purchasing can be considered a subset of contracting in that while purchasing managers possess expertise in areas such as supply chain management, contracting personnel may be employed in more diverse arenas. For example, a contracting officer may be buying office furniture, purchasing janitorial services, or procuring a new weapon system. The following information on purchasing certifications provides a point of reference and facilitates comparison with the previously mentioned contracting certifications.

The National Association of Purchasing Managers is a professional organization intended to provide national and international leadership in purchasing as well as supply chain management and materials management. This organization originated the Certified Purchasing Manager (CPM) certification in 1974. Applicants for the CPM certification must successfully complete a comprehensive examination. In addition, they must either have five years of full-time professional purchasing and supply management experience, or have a four-year degree from an accredited institution and three years of full-time professional purchasing and supply management experience. Individuals who have earned the CPM designation are required to be recertified every five years. Re-certification is accomplished according to the organization's point scale. To be re-certified, an applicant must earn twelve CPM points during their current certificate period. A minimum of eight points must be educational in nature and the other four may be earned in a professional contributions category. Categories considered educational in nature are college courses either taken or taught, continuing education classes either taken or taught, and the CPM examination (NAPM homepage, 25 Nov 98).

Another purchasing certification is offered by the National Institute of Governmental Purchasing (NIGP). Like the National Association of Purchasing Managers, NIGP is

another professional organization with the purpose of providing education and technical assistance for the government purchasing community. This organization provides two certifications, the Certified Public Purchasing Officer (CPPO) certification and the Certified Professional Public Buyer (CPPB) certification. The CPPB designation is designed to be an entry level certification, whereas the CPPO designation denotes a more advanced appointment (Similar to the CACM and CPCM designations under the NCMA program). Requirements to sit for the examinations for the two purchasing certifications are summarized in Tables 4 and 5 (NIGP homepage, 11 Feb 99).

Table 1. CPPB Examination Eligibility Requirements

Schedule A	High School Diploma or GED
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	4 years total purchasing experience which must include 2 years of current public purchasing experience
Schedule B	Associate's degree
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	3 years total purchasing experience which must include 2 years of current public purchasing experience
Schedule C	Bachelor's degree
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	2 years of current public purchasing experience
Schedule D	Advanced degree (Master's or Ph.D.)
	3 college credit hours in purchasing courses **or** 24 contact hours in purchasing seminars
	2 years of current public purchasing experience

Table 2. CPPO Examination Eligibility Requirements

Schedule A	High School Diploma or GED
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	5 years total purchasing experience: 4 years current public purchasing experience, of which 2 years are in a public purchasing management function.
Schedule B	Associate degree
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	4 years total purchasing experience: 3 years current public purchasing experience, of which 2 years are in a public purchasing management function.
Schedule C	Bachelor's degree
	6 college credit hours in purchasing courses **or** 48 contact hours in purchasing seminars
	3 years total purchasing experience: 2 years current public purchasing experience, of which 2 years are in a public purchasing management function.
Schedule D	Advanced degree (Master's or Ph.D.)
	3 college credit hours in purchasing courses **or** 24 contact hours in purchasing seminars
	3 years total purchasing experience: 2 years current public purchasing experience, of which 2 years are in a public purchasing management function.

In addition, recertification is required every five years in order to maintain either of these designations. Recertification is based on a point system comprised of organization membership, professional contributions, as well as education and training.

Professional Contracting Certifications

As previously stated, an effective certification program can inform both employers and applicants about what training and skills are most fundamental to good practice, and it can differentiate these from related but secondary credentials. A recent study has identified knowledge, skills, and abilities critical to contracting officers as identified by contracting managers (Joyner, 1998). The study identified these attributes via

questionnaires to the supervisors of contracting officers. Results of these questionnaires are presented in Table 3.

Table 3. Essential Knowledge, Skills, Abilities, and Other Characteristics (Joyner and Ucciardi, 1998)

Knowledge	Skills	Abilities	Other Characteristics
Regulations	Negotiation	Communication	Ethical
Business Practices	Computer Literate	Analytical	Confident
Technical	Organized	Interpersonal	Accountable
Law	Business Acumen	Leadership	Even-Tempered
Bachelor's Degree	Planning	Flexibility	Customer Oriented

Based upon the desired attributes of contracting officers, as identified by Joyner and Ucciardi, it follows that an effective certification model for contracting may need to be constructed around this framework. The majority of these attributes lend themselves to being learned while others do not. Those that can be learned and measured would likely need to be evaluated in a certification model. It is realistic that through a combination of job experience, education, and formal training, an individual has the potential to develop these attributes. While it can be argued for example that neither ethics nor leadership can be taught from a textbook, contracting experience can at least introduce an individual to these characteristics and continually reinforce their importance on the job. It is understandable that these desired attributes should be captured in a contracting certification program and supports the requirements for experience, formal training, and education currently incorporated in the NCMA and APDP programs.

The contracting profession has two established certification programs, one for DoD contracting personnel and a second for the contracting profession in general. The first certification program to be discussed is the APDP program. In an attempt to improve Department of Defense (DoD) acquisition training and in response to a number of highly publicized procurement blunders, Congress enacted and implemented the Defense Acquisition Workforce Improvement Act in September 1990. The intent of the Defense Acquisition Workforce Improvement Act was to develop a better-trained and more professional DoD workforce and to reestablish the public's trust in government acquisition personnel. The Defense Acquisition Workforce Improvement Act resulted in the implementation of a certified training curriculum mandatory for progression in the contracting career field, as well as other acquisition specialties.

The three-tiered APDP system mandates certain Defense Acquisition University courses in such areas as contract pricing, contract law, and contract administration for certification in the contracting field (Office of the Under Secretary of Defense for Acquisition and Technology1996). In addition, strict experience timelines must be met before an individual can be granted certification and receive a contracting warrant. Currently, there are no recertification requirements. Table 2 identifies the minimum requirements for each certification level under the APDP system (OSDA&T, 1996: Appendix F).

Table 4. APDP Certification Requirements (OUSDA&T, 1996)

Certification Level	Mandatory Education	Minimum Experience
Entry Level (I)	Bachelors Degree w/24 business related semester hours OR 10 years experience Contracting Fundamentals Contract Pricing	1 Year
Intermediate Level (II)	Intermediate Contracting Intermediate Contract Pricing Government Contract Law	2 Years
Advanced Level (III)	Executive Contracting Management for Contract Supervisors	4 Years

For an individual to be appointed a warranted contracting officer, he or she must possess level I certification. A warranted contracting officer is the only person who may legally obligate government funds. However, it is common practice in the career field to require level II certification before making such an appointment. The government is somewhat unique in this respect. Most other professions encourage certification but allow its practice without it (Wiley, 1995). Certification should not be confused with licensure where an individual is prohibited from practicing a profession without a license.

The second established contracting certification program is sponsored by NCMA. It consists of two levels: the Certified Associate Contract Manager (CACM) and the Certified Professional Contract Manager (CPCM). The CACM is NCMA's entry-level certification designation while the CPCM is a more advanced certification than the CACM. According to NCMA, the purpose of its certification program is to certify professional growth and accomplishments, and to improve professionalism (NCMA homepage, 1 Feb 99). There are currently no requirements for NCMA certification to be appointed a warranted contracting officer for the government. NCMA encourages certification for a number of reasons. These include greater respect and recognition, increased competitiveness in the job market, an indication of personal initiative, a

validation of contracting proficiency, increases professional credibility, demonstrates achievement, knowledge, and skills and is an advantage when being considered for hiring and promotions (NCMA homepage).

The CACM designation recognizes the mastery of the fundamentals of the government contracting profession through a combination of formal education, acquisition education and training, contracting experience, and a comprehensive examination. The CPCM designation recognizes individuals who have attained a high level of education, experience, and training in the procurement and contracting profession through an even more stringent set of requirements. Requirements for the respective certification designations are presented in Table 3 (NCMA homepage, 1 Feb 99).

Table 5. NCMA Certification Requirements (NCMA homepage)

Certification	Requirements
Entry Level (CACM)	-- 1 year college, 1 acquisition course, 4 additional courses/years from one or more of the previous three categories -- 1 year contracting experience -- Successful completion of the CACM examination
Advanced Level (CPCM)	-- Bachelor's degree, 8 procurement related courses -- 2 years contracting experience -- Successful completion of the CPCM examination

Comparison of Certification Programs

The research team's review of certification programs reveals that many characteristics are common to all programs. All of the certification programs reviewed require some level of fundamental education, related experience, and demonstrated success on a comprehensive examination. Both the APDP and NCMA contracting certification programs have many of these same elements in their attempts to ensure a qualified

professional workforce. However, of the programs reviewed, only the APDP program does not require the comprehensive examination.

Based on this review of other effective certification programs, we will develop a preliminary model of the characterizations of an ideal certification program as it relates to the field of contracting. We intend to employ a modified Delphi technique using subject matter experts to assist with the development of an ideal model.

III. Methodology

Overview

Based on the review of other effective certification programs, the research team developed a preliminary model of the characterizations of an ideal certification program as it relates to the field of government contracting. To satisfy the objectives and research questions identified in Chapter I, the research team employed a modified Delphi technique to obtain purposive judgment samples from a variety of experts in the contracting field.

Following the formulation of our certification model, comparisons were made with the existing certification programs (NCMA and APDP). In addition, the research team conducted a widespread assessment of the model by soliciting the opinion of contracting certification stakeholders. Basically, this widespread assessment revealed how contracting personnel might react to the implementation of this new system.

Phases of Research. The following four phases of research were necessary to achieve our research objectives:

1. Basic concepts and model inputs for the ideal contracting certification program were obtained using a set of open-ended written interview style questions, which were electronically mailed to each member of the expert panel, with responses being independently evaluated by each member of the research team.

2. A questionnaire, with more specific questions than in the previous phase, was developed based upon the results of phase 1. A modified Delphi technique was applied to this questionnaire, to provide a set of detailed inputs for the model. It was expected

that at least two rounds of feedback and adjustment would be used to converge on a majority agreement.

3. A certification model was formed based upon the consensus formed in the previous phase. The research team then assessed differences between this model and existing certification programs.

4. The details of the newly developed contracting certification program, along with a questionnaire was sent to 100 stakeholders in the contracting career field to gain perceptions on whether or not the new model is superior to those already in existence.

The remainder of this chapter addresses the justification for the selected methodology, the selection and assignment of experts, the data analysis and decision criteria, the development of survey instruments, and model development.

Justification for the Methodology

This research was qualitative. The subject matter had no numerical values by which measurement was possible. Personnel competencies and job-related qualifications thus became dependent on judgment. In such cases, the best possible judgment should be obtained; hence, expert opinion becomes valuable. Decision theory holds that, under uncertainty, the quality of the decision, or the probability of a correct decision, improves as the amount of information increases (Anderson, 1985).

The Delphi technique involves the use of subject matter experts to attain an ideal model. The Delphi procedure grew out of experiments from the RAND Corporation in the late 1940's in an effort to enhance the reliability of forecasting. Several types of group response techniques were attempted, based on the theory that "N heads are better than one." The studies at RAND indicated three main disadvantages of using group

discussion and committee efforts to reach accurate group responses. These disadvantages included 1) influence by dominant members, 2) excess noise (extraneous information), and 3) group pressure for compromise and conformity. The Delphi technique controls for these disadvantages of group consensus by offering anonymity, controlled feedback, and statistical group response (Nancarrow, 1987).

There are several properties of the Delphi technique that should be pointed out. The procedure is, above all, a rapid and relatively efficient way to gain the opinions of a highly select group of experts. The feedback, if the group of experts involved is mutually self-respecting, can be novel and interesting to all. The use of controlled feedback by the research team lended an air of objectivity to the outcomes that may or may not have been spurious, but which were at least reassuring. And finally, anonymity and group response allowed a sharing of responsibility and a release from the respondents' inhibitions. The Delphi technique is subject to greater acceptance on the part of the group than are the consensus's arrived at by more direct forms of group interaction (Dalkey, 1969).

This research effort departs from the traditional Delphi approach, in that the research team attempted to streamline the number of iterations by dropping off solely unique or isolated responses during the interview process. For example, responses provided during the interview process that were unique to a single user, were dismissed and not offered as responses during subsequent rounds of questioning. The research team realizes that this approach deviates from the true Delphi technique in that minority opinions are quickly dismissed and not further offered to the panel for consideration. This deviation is incorporated based upon the limited time available to conduct this study as well as the time considerations of the expert panel. The research team felt that excessive iterations

of similar questionnaires would reduce interest and participation from the expert panel, and would subsequently detract from the formulation of the ideal model. By eliminating isolated responses during the interview process, the research team was able to arrive at a majority agreement quickly in the model development process, while retaining maximum panel member participation.

In addition, the research team was fully aware of the vulnerabilities that bias can have on this form of research. Bias can occur in the selection of experts, topics and questions, the wording of questions, the manner of interviewing, and the interpretation of responses. (Shane, 1998). The research team made every effort to detect and minimize bias. One such technique used was that the research team independently evaluated the questionnaire responses and then reported their findings to one another.

Experts

To begin collecting data for the ideal contracting certification model, it was first important to identify the population from which to select a representative sample of experts. One of the criticisms of the Delphi technique is that literature is inconclusive concerning the value of experts in reaching accurate group predictions (Sackman, 1974). However, for the purposes of basic information gathering, the use of experts is considered important and does not degrade the results generated by using the Delphi technique (Brown & Helmer, 1964). Since this study focused on a contracting certification model for government contracting, that was the population targeted.

The ideal expert panel for this research effort should be representative of the entire Department of Defense contracting corps, since this research was focused on a certification model applicable to this population. For a sample to be representative of this

population, a mix of military officials was required from each military service, as well as a proportionate number of civilians from each service. The research team concedes that a sample of this type would be ideal to represent the Department of Defense contracting corps. However, it was necessary that appropriate trade-offs were made in this area due to limited contacts and interactions within the various military branches. The research team attempted to gain a diverse mix of experts for the panel, but for the purposes of time and expedited communications, the expert panel consisted primarily of senior military and civilian personnel from the Air Force contracting career field.

As a result, the research team envisioned an expert panel comprised of five Air Force colonels, and ten civilians, with a minimum pay-grade of GS-14. The requirements to be considered an expert and serve on this panel include 1) a minimum pay-grade of O-6 or GS-14, 2) a minimum of fifteen years contracting experience, and 3) serving, either presently or in the past, as a supervisor of contracting personnel. The research team feels that these prerequisites provided a panel with considerable knowledge and experience in the contracting profession.

The selection of the expert panel was based upon the above criteria, in addition to the feasibility or realism that the personnel were receptive and willing to participate in the study. The research team attempted to formulate the expert panel by soliciting personnel, possessing the required qualifications, from various major commands throughout the Air Force.

Interviews

A short electronic interview was used for the second phase of research, in which basic concepts were gathered and used in formulating the Delphi questionnaire. Personal (face

to face) or telephone interviews were not anticipated, but could have been warranted if time permitted and the electronic interview did not generate satisfactory results. These secondary interview methods have the same advantages in high participation rates, interviewer control, and flexibility; however, they also have the same disadvantages of interviewer bias, time restrictions, and the possibility for interpretation error (Parten, 1966). The research team feels that electronic interviews provided wide geographical capability at a low cost with timely feedback. In addition, the potential for misinterpretation was significantly reduced with the written document. Furthermore, follow-up questions and clarification requests were also faster and more flexible by using electronic media.

The interview questions covered broad categories of the certification model and were predominantly very general in nature. The interviews were comprised of eleven questions. The questions were worded so as to not reference or lead the panel members toward thinking about the existing certification models. The goal here was to draw out new and innovative ideas that can be applied toward contracting certification. Once a framework was developed from these initial interviews, more specific questions were asked in the form of a Delphi questionnaire.

Delphi Questionnaire

The members of the expert panel were each asked to respond to a questionnaire outlining the requirements of the ideal contracting certification model. This certification system model may entail two or three levels of certification (to be determined in the interviews). Upon receiving the initial responses from the interview, the research team reviewed and consolidated the responses and included the group modal response when

sending out the second round of questionnaire. The respondents were asked to reconsider each answer and again respond. Additional questions were added to the second round depending upon the comments received on the first round. The goal of the research team was to achieve a majority consensus (greater than 50%) among experts for each of the questionnaire items. If a majority consensus was not achieved after two rounds, then a third and possibly fourth round of questionnaire was conducted. This process was repeated until the panel had reached a majority consensus. Once the established level of agreement was attained, the research team presented the finished product – the ideal characterization of a certification system for the contracting profession.

Model Development and Stakeholder Assessment

The research team compared the newly constructed model with the two existing contracting certification programs. The research team assessed the similarities and differences between our model and existing certification programs, seeking to answer the question "How do they measure up to our model?" A widespread survey was developed and implemented to assess stakeholders' perceptions of the existing certification programs against the new characterization. A combination of the expert's input and survey results assisted in identifying possible deficiencies in the current certification programs. After identifying these differences, the researchers identified possible corrective actions to the existing programs followed by recommendations to the contracting profession on professional certification.

IV. Data Description and Analysis

Introduction

This chapter describes the results of the data collection phases of this study. The research plan described in Chapter III included electronic interviews, a Delphi Survey, and a stakeholder assessment. The purpose of the electronic interviews was to use open-ended questions to elicit freethinking from the expert panel regarding what they considered to be the ideal contracting certification model, without guiding or influencing them towards any currently existing model. The objective of the Delphi Survey was to gain a consensus from the expert panel to formulate the ideal contracting certification model based upon the various responses to the electronic interview. The final stakeholder assessment was used to gain insight from the contracting field as to how the ideal model is perceived when compared with the existing certification programs offered by APDP and NCMA.

Each of the thirteen members of the expert panel (listed in Appendix A) were sent the electronic interview and the Delphi Questionnaire. Of the thirteen members solicited, 10 interviews were completed and returned, and 11 members responded to the Delphi Questionnaire. The grades of the civilian panel members ranged from GS-13 to members of the Selective Executive Service (SES). The previously stated minimum civilian grade requirement of GS-14 was relaxed to include a GS-13, who holds multi-service contracting experience. This is a highly experienced individual in both the Army and the Air Force and is considered an expert by the research team. The board was also comprised of four Air Force Colonels, and a civilian from both the Army and Navy. The

research team feels that the expert panel comprised of both military and civilian contracting officials, from three branches of the Department of Defense, offered a diversified insight to the formulation of the ideal contracting certification model.

Initial Interview in the Formulation of the Ideal Contracting Certification Model

Interview Questions. The interview questions are listed in Appendix B. The interviews consisted of six questions designed to get the expert panel to express their thoughts and rationale towards an ideal contracting certification program. Two questions asked the panel members to make a choice, either yes or no, but to also indicate their rationale behind their decision. The other four questions were open-ended and asked the panel members to describe what they would view as the ideal certification program.

General Results. The results of the interview process provided the framework for the Delphi questionnaire, and were considered by the research team adequate to serve as the first round of the Delphi process. Each interview question, as anticipated, generated various responses from the expert panel. Although some responses were more prevalent than others, the research team determined no single response represented a strong consensus among panel members.

Results and Expert Comments by Question. The overall response for each of the six questions, as well as specific comments provided by the panel members, are identified below. The specific comments listed throughout this chapter are actual quotes from members of the expert panel. However, due to the anonymity of the Delphi process, as discussed in Chapter III, the quotes are not referenced.

Question 1. Should the ideal contracting certification program have multiple levels of certification? Why or why not? If yes, how many levels do you believe would be appropriate and why?

Overall Response. While 80% of the panel members were in favor of multiple certification levels, they did not reach consensus concerning the ideal number of certification levels. 40% of the panel agreed that three levels would be ideal, 30% believed that two levels would be ideal, 10% felt that four levels would be ideal, and 20% indicated that multiple levels are certification were not necessary. Comments supporting each of these positions follow.

Specific Comments. In not favoring multiple levels of certification, one panel member responded "multiple levels cheapen/degrade the prestige of certification...CPA's don't have an 'almost good enough to be a CPA' certificate." While this statement is respected by the research team, it is considered to be a minority opinion with respect to the research panel, and was not included in the follow-on Delphi survey. In supporting two levels of certification, a panel member stated "A certification program with multiple levels that is properly implemented can provide a mechanism for both recognition and motivation. The number of levels should not exceed two." In contrast to the two level approach, many panel members stated that three levels would be more ideal. In supporting three levels of certification, one panel member stated "the 3-level structure tracks to the logical categorization based upon individual capability and experience. Two levels would be too little and four levels would be greater than the degree of distinction recognizable in the workforce." This was the most common response for this question gaining a 40% response rate from the expert panel. Finally,

one panel member supported a fourth certification level by stating "Presently, a Level III (APDP) can be obtained very early. This is the last certification an individual needs to be concerned about. A fourth certification should be obtained with about 8 years in the field to allow the individual to continue to stress their own development in the field." This was considered by the research team to be a minority opinion among the expert panel, and was not included in the follow-on Delphi questionnaire.

Conclusion. Based upon the responses provided, the research team concluded that the expert panel reached a majority consensus in regards to favoring multiple levels of certification. However, among the panel members that opted for multiple levels, a consensus was not reached with regard to the exact number of levels. Thus, the research team will include this question again in a Delphi questionnaire that will limit the choices of the expert panel. The expert panel will be asked to choose between two or three certification levels for the ideal model. While the research team respects the arguments for both a single level as well as a four level system, it was determined that these responses were unlikely to gain a timely consensus from the expert panel, and were thus not included in the formulation of the follow-on questionnaire.

Question 2. How many years of contracting experience should an individual have to qualify for certification? Please identify the years of experience required with each level of certification identified in Question 1.

Overall Response. The responses to this question varied tremendously. Under a two-level system, the panel members were evenly split between three, four, and five years of experience for the first level. For the second level of a two-level system, 33% of the panel recommended seven years of experience, while 67% of the panel

preferred ten years. Under a three-level system, 50% of the panel agreed that three years should be the minimum experience requirement for the first level of certification. 25% of the panel stated two years would be sufficient, and 25% stated that no experience (entry level) should be required for the first level. For the second level of a three-level system, the panel was evenly split among three, four, five, and six years of contracting experience. Finally, for the third level of a three-level system, 50% of the panel agreed that ten years should be the minimum experience requirement to reach the highest level of certification. 25% of the panel stated eight years would be sufficient, and 25% stated that a minimum of five years would be sufficient to reach this level.

Specific Comments. Very few comments were received in response to this question. The majority of the expert panel simply responded with the years of contracting experience they felt would be commensurate with the certification levels they indicated in Question 1. However, in support of using experience as a certification credential, one panel member stated "Experience and education are critical components of any certification program." This statement appears to be supported by the majority of the expert panel, based upon the experience requirements in the above responses. However, one panel member warned against simply using time as a measure of experience stating that it is hard to determine if a person has "20 years of experience or one year of experience 20 times over." Another panel member supported this thought stating "Do not tie certification to experience unless you can also measure the breadth and depth of experience." The research team acknowledges that mere time on the job is not necessarily meaningful experience, but also feels that a certain amount of experience should be required before an individual can be certified in any profession. The

importance of the experience factor is echoed by 90% of the expert panel with regard to their responses, and is considered to be a critical component of the certification process.

Conclusion. Based upon the responses provided, the research team concluded that the expert panel reached a majority consensus in regards to including contracting experience in the ideal certification model. However, a consensus was not reached on the exact amount of experience necessary for each level of certification. Thus, the research team will include this question again in a Delphi questionnaire that will limit the choices of the expert panel. The expert panel will be asked to select the appropriate experience criteria for each level in both a two-level and a three-level program. For the first level of a two-level program, the options will be three, four or five years. For the second level of a two-level program, the options will be either seven or ten years. For the first level of a three-level program, the options will be zero, two or three years. For the second level of a three-level program, the options will be three, four, five or six years. Finally, for the third level of a three-level program, the options will be five, eight or ten years. Only the responses given in the interviews will be provided as options for the Delphi questionnaire. This reduces the influence that the research team has in the formulation of the ideal certification model.

Question 3. What levels of education should an individual have to qualify for certification? Please identify the education level required with each level of certification identified in Question 1.

Overall Response. For those panel members favoring a two-level system, 100% agreed that a Bachelor's degree should be required for the first level of certification. 67% of the panel who favored a two-level system, agreed that a Master's

degree should be required to achieve the second level, and 33% stated that a professional certification such as NCMA should be required to achieve the second level. Under a three-level system, 50% of the panel agreed that a Bachelor's degree should be required for all three levels, while the other 50% stated that education levels were not relevant to the certification process. 30% of the panel members stated that a Master's degree should be desired for the third level of a three-level system, but should not be required.

Specific Comments. Very few comments were received in response to this question. The majority of the expert panel simply responded with the level of education they felt would be commensurate with the certification levels identified in Question 1. However, in regard to education levels, one panel member stated "(Do) not tie the degree to a specific field such as Business, but use the degree as an indicator of potential." Other panel members stated that the current DAWIA requirements were satisfactory calling for a Bachelor's degree or 24 hours of business classes. These comments appear consistent in that a Bachelor's degree in any field should deem a person eligible for certification. However, several panel members felt that education is not a relevant part of the certification process. One panel member stated "I have not seen a direct relationship between education level and an individual's ability to do the job", another panel member echoed this statement in that he felt that longer experience time is a suitable substitute for business education. Thus, a majority consensus was not reached as to the education levels required for contracting certification under the ideal model.

Conclusion. Based upon the responses provided, the research team concluded that the expert panel did not reach a majority consensus in regards to including education levels in the ideal certification model. As a result, the research team will

include this question again in a Delphi questionnaire that will limit the choices of the expert panel. The expert panel will be asked to select the appropriate education level for each certification level in both a two-level and a three-level program. For the first level of a two-level program, the options will be either a Bachelor's degree or "other" in which the panel members can elaborate or specify an alternate education preference. For the second level of a two-level program, the options will be Master's degree, Additional Professional Certification, or "other". For each level in a three-level program, the options will be either Bachelor's degree or "Education levels are not relevant". These were the only two responses identified in the interviews for the three-level program. Again, only the responses given in the interviews will be provided as options for the Delphi questionnaire.

Question 4. What kinds of contracting related courses (fundamentals, law, negotiation, etc.) should an individual complete prior to being certified? Should different types of courses correspond to different levels of certification?

Overall Response. While the intent of this question was for the panel members to identify specific courses and relate these courses to the various levels of certification, very few panel members responded in this manner. The majority of responses were not specific enough for the research team to identify the contracting coursework that should be required for certification under an ideal model.

Specific Comments. 30% of responses included an opinion that the existing APDP course requirements were sufficient for a contracting certification program. While the existing APDP coursework may be sufficient, other panel members indicated that the existing requirements could be improved by requiring at least one more

course every two years, or by incorporating specialty courses based upon an individual's specific assignment. 20% of the panel actually identified which courses should be required to reach each level of certification. While these panel members predominantly listed the existing APDP curriculum, they also indicated that some courses should be required more early on (i.e., level one) than are currently required.

Conclusion. As a result of the generic responses received, a majority consensus was not reached as to which courses should be required for the specific levels of certification. Thus, the research team will attempt to gain more specific responses by including this question again in the Delphi questionnaire. The questionnaire will list all the courses identified in the interview process and ask the panel members to indicate which level of certification they should be required for under both a two-level and a three-level system. The panel members will have the option of choosing a certification level (one through three) or indicating that a specific course is not relevant. Using this approach, the research team expects to obtain a clear consensus as to which courses should be required for the various levels of certification. Only the courses identified by panel members in the interview process will appear on the questionnaire. Again, this is designed to reduce the influence that the research team has in the formulation of the ideal certification model.

Question 5. Should certification under the ideal contracting certification program require an individual to pass a comprehensive examination? Why or why not?

Overall Response. 70% of the panel responded favorably to the incorporation of a comprehensive examination into the ideal contracting certification program. Of this 70%, 60% indicated that a comprehensive examination should be

administered for all levels of certification, while 10% felt that a comprehensive examination should only be required for the highest level of certification. 30% of the panel felt that a comprehensive examination would not be beneficial to the ideal model.

Specific Comments. Advocates of a comprehensive examination stated such reasons as keeping standards high, keeping abreast of changes and ensuring a demonstrated knowledge as reasons why a comprehensive examination would be beneficial. One panel member captured this view in stating "...this keeps the individual thinking and staying abreast of the changes in the field so they can respond to questions pertinent to the field." Even though advocating a comprehensive examination, certain panel members warned of the inherent challenges. One panel member cautioned the implementation of such an examination by stating "There are, of course, problems with tests; who prepares, administers and scores the test is the biggest challenge." 30% of the panel members were opposed to such an examination stating the administrative burden and the danger of people memorizing things solely for the purpose of test taking as the driving reasons. One panel member in opposition to a comprehensive examination stated "I do not want contracting people memorizing things for tests. I want them in the regulations to insure they know what they are doing." Another panel member also had a valid point in identifying reasons against implementing a comprehensive examination stating "I believe the only valid examination would have to be scenario type questions. The administrative burden of developing a pool of questions to use (of equal difficulty) and of scoring such a test is prohibitive."

Conclusion. Based upon the responses provided, the research team concluded that the expert panel reached a majority consensus in regards to including a

comprehensive examination in the ideal certification model. However, the desired consensus level was not reached to identify for which certification levels a test should be required. Thus, the research team will include this question again in a Delphi questionnaire that will limit the choices of the expert panel. The expert panel will again be asked if a comprehensive examination should be required for certification. Three options will be provided for the panel to choose from: 1) Yes, for all levels, 2) Yes, for only the most advanced level, and 3) No, an examination would not be beneficial. Using this form of question, the research team seeks to gain a clear consensus on the use of a comprehensive examination in the ideal contracting certification model. Only the responses given in the interviews will be provided as options for the Delphi questionnaire. This reduces the influence that the research team has in the formulation of the ideal certification model.

Question 6. Under an ideal contracting certification program, should periodic re-certification be required for an individual to retain his/her certification? Why or why not? If you believe re-certification should be required, how often should this be accomplished and what should it entail?

Overall Response. A strong majority (70%) of the panel agreed that re-certification should be incorporated into the ideal contracting certification program. Of this 70%, 50% indicated that re-certification should be based upon experience and continuing education, while 10% felt that a periodic examination should be required for re-certification. The remaining 10% felt that re-certification should be based upon additional experience, continuing education, and a periodic examination. In addition, 30% of the panel felt that re-certification should not be included in the ideal model.

Specific Comments. In support of a re-certification requirement, one panel member stated "Federal acquisition has become so complex that it is necessary to make sure we are keeping the right people with the right level of understanding in the right positions… A recertification test should cover current issues and pose practical problems." While a re-certification test was only favored by 10% of the panel, other panel members favored re-certification based upon experience and continuing education. As one panel stated "Re-certification should be required every 5 years to reinforce the meaning and significance of certification…An individual should complete an average of 40 hours of specialized training per year over the past 5-year period." Other panel members recommended a continuing education requirement of three courses every four years to be eligible for re-certification. However, 30% of the panel was opposed to a re-certification requirement. A recurring theme among these panel members was that once an individual obtains a certain level of certification they should be able to maintain that level similar to being granted a contracting warrant. One panel member further cautioned against a re-certification program by stating that the Government's grievance process would significantly reduce a supervisor's ability to deny re-certification to a satisfactory performer.

Conclusion. Based upon the responses provided, the research team concluded that the expert panel reached a majority consensus in regards to including a re-certification requirement in the ideal certification model. However, the desired consensus level was not reached to identify which criteria should be met in order for an individual to qualify for re-certification. Thus, the research team developed three follow-

on questions to be used in a Delphi questionnaire which will limit the choices of the expert panel.

First, the expert panel will be asked if periodic re-certification should be required under the ideal program. Four options will be provided for the panel to choose from: 1) Yes, via an examination, 2) Yes, via experience and continuing education, 3) Yes, via an examination, experience, and continuing education, and 4) No, re-certification should not be required. Using this form of question, the research team seeks to gain a clear consensus on the criteria with which to incorporate or not incorporate a re-certification requirement.

Secondly, with regard to re-certification, the expert panel will be asked to select an appropriate time frame for which a certification remains valid. The expert panel will be able to choose in one-year increments from one year up to five years. One year and five years were the two extreme points identified in the interview process with regard to the re-certification timeframe and as a result are used as a range for the questionnaire responses. Using this form of question, the research team seeks to gain a clear consensus as to the validity period granted each certification under the ideal model.

Finally, with regard to the continuing education requirement, the expert panel will be asked to identify the proper amount of annual education (on average) that should be required for re-certification. The following options will be available for the expert panel to select from: 1) 30 hours per year, 2) 40 hours per year, and 3) "Other" in which the panel member will be asked to enter an exact number of hours per year. The first two options were taken directly from the interview responses. However, as only 30% of the expert panel responded to the interview with an exact continuing education requirement,

the research team included a third option for this question in which the panel members will be permitted to enter their own criteria. Using this form of question, the research team seeks to gain a clear consensus on the continuing education criteria regarding re-certification under the ideal contracting certification program.

Delphi Questionnaire and Model Formulation

Delphi Questions. The Delphi questionnaire used in this phase of data collection is provided in Appendix C. The questions used for this instrument were derived from the electronic interviews discussed in the previous section. The rationale for the inclusion of each question, the question format, and the provided choices was provided in the analysis of the interview responses in the previous section. The questionnaire consisted of eleven multiple-choice questions designed to obtain a consensus among panel members as to the precise characteristics and requirements for the ideal contracting certification model.

General Results. The results of the Delphi questionnaire provided for the formulation of the ideal contracting certification model. Of the 13 expert panel members, 11 members responded to this questionnaire. While the research team originally sought to reach a 70% consensus on each aspect of the certification model, the research team relaxed the consensus goal to a simple majority decision on each element of the model to facilitate the timeline of this research effort. By relaxing the 70% consensus goal to a simple majority decision, the research team was able to complete the Delphi portion of this research with only two rounds of data collection, and was then able to conduct a thorough stakeholder assessment of the formulated model.

Results by Question and Model Formulation. The overall responses for each of the eleven questions are identified below. For each question, the response receiving the

majority consensus was incorporated into the ideal contracting certification model. The majority response to some questions made other questions irrelevant in the formulation of the ideal model. For example, Question 1 asked the panel to select from either a two-level program or a three-level program. Since the three-level program received the majority response rate, the questions pertaining exclusively to a two-level system (Questions 2, 4, and 6) were no longer pertinent in the formulation of the ideal model. The results to these questions will still be provided below for informational purposes, but are not included in the model formulation. This method was designed by the research team to save time in the data collection phase of this research. By asking questions tailored to both a two-level and a three-level system simultaneously, the research team had the data available to support either system. This was designed to prevent the need for future rounds of the Delphi process. The results from the Delphi questionnaire are provided below.

Question 1 – Levels of Certification. How many levels of certification do you believe would be appropriate for the ideal contracting certification program?

Response. 45% Two Levels

55% Three Levels

Analysis. The expert panel preferred a three-level certification program as opposed to a two-level certification program by a very small margin. Despite this small margin, the research team was convinced that future rounds of Delphi surveys would not necessarily change the majority opinion in regards to this question. As a result, and adhering to the majority opinion of the expert panel, the research team

concluded that the ideal contracting certification program should be comprised of three distinct levels of certification.

Question 2 – Experience (two-level). How many years of contracting experience should an individual have to possess in order to qualify for certification under a TWO-LEVEL program? Note: based upon the majority response to question one, a two-level program was not adopted for the ideal model. Nonetheless, the results to this question are provided for information purposes only.

Response. LEVEL ONE:

91%	**Three Years**
9%	Four Years
0%	Five Years

LEVEL TWO:

73%	**Seven Years**
27%	Ten Years

Analysis. As stated above, this question was determined to be irrelevant for the ideal model based upon the panels selection of a three-level system in Question 1. Nonetheless, it is interesting to note that if a two-level system had been adopted, a clear consensus existed that individuals should possess a minimum of three years contracting experience to reach the first level, and a total of seven years contracting experience to reach the second level. The experience requirements for the selected three-level system will be identified in the following question.

Question 3 – Experience (three-level). How many years of contracting experience should an individual have to possess in order to qualify for certification under a THREE-LEVEL program?

Response. LEVEL ONE:

9% No experience

55% Two Years

36% Three Years

LEVEL TWO:

9% ThreeYears

27.5% Four Years

36% Five Years

27.5% Six Years

LEVEL THREE:

0% Five Years

27% Eight Years

73% Ten Years

Analysis. This question constructs a critical component of the ideal certification model, in that specific experience requirements are identified for each of the three levels of certification. The majority of panel members (55%) concurred that two years of contracting experience should be required before an individual can be certified at the first level (entry-level) of certification. The experience level required to reach the second level of certification was determined by the expert panel to be five years. While the panel was nearly split between four, five, and six years of experience for this second

level of certification, five years of experience received slightly more support (36%) from the expert panel, and was thus adopted for the ideal model. The panel reached a decisive consensus with regard to the third level of certification, with 73% of the panel agreeing that 10 years of contracting experience should be required before an individual can possess the highest contracting certification level. These experience requirements will be compared with the existing APDP and NCMA requirements during the stakeholder assessment portion of this chapter.

Question 4 – Education (two-level). What level of education should an individual have to possess in order to qualify for certification under a TWO-LEVEL program?

Response. LEVEL ONE:

91%	**B.S. / B.A.**
9%	Education level is not relevant

LEVEL TWO:

45.5%	**Masters Degree**
36.5%	Additional Professional Certification
9%	A broad based specialty training program
9%	No experience

Analysis. As stated above, this question was determined to be irrelevant for the ideal model based upon the panels selection of a three-level system in Question 1. Nonetheless, it is interesting to note that if a two-level system had been adopted, a clear consensus (91%) existed that individuals should possess a Bachelors degree in order to qualify for the first level of certification. In addition, the expert panel gave a slight preference (45.5%) towards requiring a Masters degree in order to reach the second level.

The educational requirements for the selected three-level system will be identified in the following question.

Question 5 – Education (three-level). What level of education should an individual have to possess in order to qualify for certification under a THREE-LEVEL program?

Response. LEVEL ONE:

73% **B.S. / B.A.**

27% Education level is not relevant

LEVEL TWO:

91% **B.S. / B.A.**

9% Education level is not relevant

LEVEL THREE:

73% **B.S. / B.A.**

9% Education level is not relevant

18% Masters Degree (write-in response)

Analysis. This question constructs a critical component of the ideal certification model, in that specific educational requirements are identified for each of the three levels of certification. A strong consensus existed between panel members (≥ 73%) that a Bachelors degree should be required for each of the three certification levels. It is interesting that although Masters degree was not one of the options provided, 18% of the panel felt compelled to write-in this response. As identified above, the options provided in response to this question were taken directly from the interviews conducted in phase 2 of this research. No panel member advocating a three-level system indicated a desire for a Masters degree requirement, and thus this option was not provided on the questionnaire.

Since 18% of the panel felt compelled to write-in this response, perhaps if a Masters degree option was provided on the questionnaire, more panel members would have voted in favor of the higher educational requirement. Nonetheless, the research team accepted the strong consensus of the panel and implemented a Bachelors degree requirement for each of level of certification in the ideal model. This educational requirement will be compared with the existing APDP and NCMA requirements during the stakeholder assessment portion of this chapter.

Question 6 – Formal Training (two-level). Please indicate to which level of certification the following contracting courses should be required under a TWO-LEVEL program.

Response.

Contracting Fundamentals:

100% **Level One** 0% Level Two 0% Not Relevant

Contract Pricing:

100% **Level One** 0% Level Two 0% Not Relevant

Specialty Course (Depending on Assignment):

36% Level One **64%** **Level Two** 0% Not Relevant

Intermediate Contracting:

27% Level One **73%** **Level Two** 0% Not Relevant

Intermediate Pricing:

9% Level One **91%** **Level Two** 0% Not Relevant

Contract Law:

82% **Level One** 18% Level Two 0% Not Relevant

Contract Negotiation:

__100%__ **Level One** __0%__ Level Two __0%__ Not Relevant

Executive Contracting:

__0%__ Level One __82%__ **Level Two** __18%__ Not Relevant

Advanced Topics in Acquisition:

__0%__ Level One __82%__ **Level Two** __18%__ Not Relevant

Management of Contracting Activities:

__0%__ Level One __82%__ **Level Two** __18%__ Not Relevant

Contract Process Improvements:

__9%__ Level One __73%__ **Level Two** __18%__ Not Relevant

Analysis. As stated above, this question was determined to be irrelevant for the ideal model based upon the panel's selection of a three-level system in Question 1. Nonetheless, it is interesting to note that if a two-level system had been adopted, a majority consensus (≥55%) existed as far as which courses should be required for each level of certification. It is also interesting to note that only a minority of panel members (≤18%) stated that some courses were not relevant to the certification process. This gives strong support for the importance of continuing education in the contracting field. The desired coursework for the selected three-level system will be identified in the following question.

Question 7 – Formal Training (three-level). Please indicate to which level of certification the following contracting courses should be required under a THREE-LEVEL program.

Response.

Contracting Fundamentals:

100% **Level 1** 0% Level 2 0% Level 3 0% N/R

Contract Pricing:

100% **Level 1** 0% Level 2 0% Level 3 0% N/R

Specialty Course (Depending on Assignment):

27% Level 1 **64%** **Level 2** 9% Level 3 0% N/R

Intermediate Contracting:

9% Level 1 **91%** **Level 2** 0% Level 3 0% N/R

Intermediate Pricing:

0% Level 1 **91%** **Level 2** 9% Level 3 0% N/R

Contract Law:

55% **Level 1** 45% Level 2 0% Level 3 0% N/R

Contract Negotiation:

73% **Level 1** 27% Level 2 0% Level 3 0% N/R

Executive Contracting:

0% Level 1 0% Level 2 **91%** **Level 3** 9% N/R

Advanced Topics in Acquisition:

0% Level 1 18% Level 2 **73%** **Level 3** 9% N/R

Management of Contracting Activities:

0% Level 1 18% Level 2 **73%** **Level 3** 9% N/R

Contract Process Improvements:

9% Level 1 27% Level 2 **45%** **Level 3** 18% N/R

Analysis. This question constructs a critical component of the ideal certification model, in that specific contracting course requirements are identified for each of the three levels of certification. The above results are summarized in Table 6.

Table 6. Procurement Related Courses Required for the Ideal Certification Model

Certification Level	Required Courses
Level 1	Contracting Fundamentals, Contract Pricing, Contract Law, Contract Negotiation
Level 2	Intermediate Contracting, Intermediate Pricing, Specialty Course
Level 3	Executive Contracting, Advanced Topics in Acquisition, Management of Contracting Activities, Contract Process Improvements

The panel reached a strong consensus (≥73%) for all the listed courses with the exception of three. First, the panel reached a narrow majority decision with regards to the specialty course identified for Level 2. This is possibly due to the fact that more specific information was not provided to the expert panel as to what exactly the specialty course contained. The specialty course was identified by a panel member during the interview process, and was thus provided on the Delphi questionnaire. The fact that every single panel member deemed this to be a relevant requirement at some level of certification gives credibility for including it in the ideal model. The research team acknowledges the majority opinion (64%) for including a specialty course as a requirement for the second level of certification. Secondly, the expert panel was nearly split (55/45) with regards to contract law being required at the first or second level of certification. Again, the research team will recognize the majority preference (55%) of the expert panel and include Contract Law as a requirement for the first level of

certification under the ideal model. The final course in which the panel arrived at less than a decisive consensus was Contract Process Improvements. The responses for this course were extremely varied. In fact, this was the only course in which panel members chose all four available responses. This may be attributed to the expert panel not being informed exactly what this course entailed. Similar to the specialty course, Contract Process Improvements was introduced by a panel member during the interview process and received 82% support for inclusion (at some level) in the ideal model. The research team will oblige the modal response (45%) of Level 3, and require Contract Process Improvements as a prerequisite for attaining the third level of certification in the ideal model. These course requirements will be compared with the existing APDP and NCMA course requirements during the stakeholder assessment portion of this chapter.

Question 8 – Examinations. Should certification under the ideal contracting certification program require an individual to pass a comprehensive examination?

Response.	**55%**	**Yes, for ALL levels of certification**
	27%	Yes, but only for the most advanced certification level
	18%	No, an examination would not be beneficial

Analysis. The expert panel reached a majority consensus with regard to implementing a comprehensive examination requirement into the ideal certification program. This response was similar to that received in the interview process in which only 18% of the expert panel rejected the notion of a comprehensive examination. The research team will include a comprehensive examination requirement for each level of certification under the ideal model. Acknowledging the inputs provided during the interview process, the type of test administered, the administration responsibility, and the

cost of administration are all concerns that would have to be resolved prior to the implementation of this requirement. These issues are beyond the scope of this research, but are addressed for reasons of practicality. Despite these potential obstacles, it is clear that a majority of the expert panel (55%) feel that a comprehensive examination would enhance the ideal contracting certification model. These examination requirement will be compared with the existing APDP and NCMA requirements during the stakeholder assessment portion of this chapter.

Question 9 – Re-certification. Under an ideal contracting certification program, should periodic RE-CERTIFICATION be required for an individual to retain his/her certification?

Response.	9%	Yes, via a periodic examination
	73%	**Yes, via experience and continuing education**
	18%	Yes, via experience, education, and an examination
	0%	No

Analysis. 100% of the expert panel agreed that re-certification is an important aspect of the ideal certification model. Although the panel was somewhat divided over what exactly re-certification should entail, a strong consensus (73%) emerged identifying contracting experience and continuing education as the driving forces for re-certification. The research noted that even though a panel majority favored a comprehensive examination for initial certification, only 27% supported a comprehensive exam for re-certification. It is assumed that the expert panel's rationale is that a certification exam will require the demonstration of a sound knowledge base in both regulatory and statutory requirements, while further experience and continuing

education will assist contracting personnel in keeping up with pertinent changes in the field. Nonetheless, it is clear that the expert panel feels strongly that re-certification should be incorporated into the ideal model based upon experience and continuing education. Since a re-certification process is incorporated into the ideal model, other questions must now be answered. How long should certification be valid before re-certification is required and how much continuing education should be required to re-certify? These questions will now be addressed.

Question 10 – Validity Period. Assuming a contracting certification program with mandatory re-certification, how long should an individual's certification remain valid?

Response.		
	0%	1 year
	0%	2 years
	27%	3 years
	9%	4 years
	64%	**5 years**

Analysis. Despite being divided among three, four, and five years, the panel reached a majority consensus (64%) of 5 years for certification validity. As certain panel members identified during the interview process, the purpose of re-certification is to ensure that individuals stay abreast of continually changing contracting requirements. This five year certification period is aimed at providing contracting personnel motivation to keep up with changing requirements, while at the same time not overburdening the administration of the system with frequent (i.e., yearly) re-certification processing. A five year validity period will be incorporated into the ideal model and compared with the

existing APDP and NCMA requirements in the stakeholder assessment portion of this chapter.

Question 11 – Continuing Education. Assuming a contracting certification program with mandatory re-certification, how much continuing education (on average) should be required to maintain an individual's certification?

Response. 9% 30 hours per year

73% 40 hours per year

Other – please specify

9% 16 hours per year

9% 12 hours per year

Analysis. It is important to recognize that every panel member indicated the need for at least 12 hours of annual continuing education for contracting personnel. While every panel member indicated the need for some continuing education, a strong consensus (73%) supported 40 classroom hours as the average annual requirement for the ideal certification model. 40 hours equates to one one-week course once per year. The research team believes this figure to be sufficient for either refresher or advanced training without forcing people to miss significant periods of work in order for them to attend various schools. As a result of the panel's strong consensus, the research team will incorporate a continuing education requirement of 40 hours per year into the ideal contracting certification model. The complete certification model will be presented below followed by a stakeholder assessment comparing the ideal model with the current APDP and NCMA certification programs.

The Ideal Contracting Certification Model

Based upon the interview process and the Delphi questionnaire presented and analyzed above, Table 7 represents the ideal contracting certification model as developed by the expert panel and research team.

Table 7. The Ideal Contracting Certification Model

Requirements	Ideal Model
Levels	3 levels
Experience	
Level 1	2 years
Level 2	5 years
Level 3	10 years
Formal Education	
Level 1	Bachelor's Degree
Level 2	same as above
Level 3	same as above
Procurement Courses	
Level 1	Contracting Fundamentals, Contract Pricing, Contract Law, Contract Negotiation
Level 2	Intermediate Contracting, Intermediate Pricing, Specialty Course
Level 3	Executive Contracting, Advanced Topics in Acquisition, Management of Contracting Activities, Contract Process Improvements
Comprehensive Examination	Yes, all levels
Re-certification	Yes, via experience and continuing education
Duration of Certification	5 years
Continuing Education	40 hours per year

Model Comparison and Stakeholder Assessment

The following table compares the newly formulated ideal model with the existing APDP and NCMA certification programs.

Table 8. Comparison of the Ideal Model with APDP and NCMA Requirements

Requirements	Ideal Model	APDP	NCMA
Levels	3 levels	3 levels	2 levels (CACM & CPCM)
Experience			
Level 1	2 years	1 year	1 year
Level 2	5 years	2 years	2 years
Level 3	10 years	4 years	N/A
Formal Education			
Level 1	Bachelor's Degree	Bachelors Degree or 24 business related semester hours, or 10 years experience	1 year college
Level 2	same as above	same as above	Bachelor's Degree
Level 3	same as above	same as above	N/A
Procurement Courses			
Level 1	Contracting Fundamentals, Contract Pricing, Contract Law, Contract Negotiation	Contracting Fundamentals, Contract Pricing	One acquisition course
Level 2	Intermediate Contracting, Intermediate Pricing, Specialty Course	Intermediate Contracting, Intermediate Pricing, Contract Law	Eight procurement-related courses
Level 3	Executive Contracting, Advanced Topics in Acquisition, Management of Contracting Activities, Contract Process Improvements	Executive Contracting, Management for Contract Supervisors	N/A
Comprehensive Examination	Yes, all levels	No	Yes, both levels
Re-certification	Yes, via experience and continuing education	No	Yes, via experience and continuing education
Duration of Certification	5 years	Indefinite	5 years
Continuing Education	40 hours per year	None	60 hours over 5-year span - 10 of 60 in last 18 months.

Stakeholder Assessment. The research team conducted a stakeholder assessment in the form of a survey to gain insight from an array of personnel in the contracting field as to how the ideal model is perceived when compared with the existing certification programs offered by APDP and NCMA. This assessment was conducted subsequent to the development of the ideal model and as a result the stakeholders had no influence on the actual model development.

The stakeholder assessment survey questions are listed in Appendix D. The survey consisted of 34 questions relating to the ideal contracting certification model. The questions were formulated by the research team to assess stakeholders' views on all elements of the model. Questions were grouped according to requirement topic (experience, education, etc.) and certification level. For instance, the first question surveyed respondents on Level 1 experience requirements of the Ideal Model compared to the experience requirements of APDP Level 1. The next question surveyed respondents on Level 1 experience requirements of the Ideal Model compared to the experience requirements of NCMA Level 1. The research team utilized a Likert scale with the following choices to assess stakeholders' opinions: Much Worse, Worse, Similar, Better, Much Better. The research team included an open-ended question after each related group of questions to determine if the respondents felt that the differences between the Ideal Model and the existing models were important. For example, after the first two questions comparing Level 1 experience requirements with the experience requirements of the existing levels, the third question asked if the differences were important and why. This gave the stakeholders a chance to justify their opinions from the

previous questions and to share their opinions relating to the differences. This pattern was repeated until all requirement topics were compared to all levels of both of the existing certification programs.

Stakeholder Selection and Participation. The research team wished to attain a stakeholder assessment through an unbiased and varied cross-section of personnel from within the contracting career field in terms of military/civilian, officer/enlisted, contracting experience, and present contracting certifications. The research team determined that surveys of one hundred qualified stakeholders would provide sufficient data to allow for a valid assessment. A qualified stakeholder was determined to be any individual currently in the contracting career field.

Participation was solicited and attained primarily from qualified individuals attending contracting-related professional continuing education courses at the School of Systems and Logistics, Air Force Institute of Technology (AFIT), Wright-Patterson Air Force Base, Ohio. Other stakeholders were selected from among Graduate Contract Management students attending the Graduate School of Logistics and Acquisition Management, AFIT, and Army contracting personnel from various locations.

Results and Comments by Question.

Question 1. How do the Level 1 experience requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	4%
Worse	25%
Similar	27%
Better	39%
Much Better	4%
No Response	1%

Analysis. The responses indicate that stakeholders view this portion of the model as an improvement to the existing APDP requirements as 43% indicated that two years of experience would be an improvement to the existing APDP requirement of one year.

Question 2. How do the Level 1 experience requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	4%
Worse	22%
Similar	30%
Better	38%
Much Better	4%
No Response	2%

Analysis. The responses indicate that stakeholders view this portion of the model as an improvement to the existing NCMA requirements as 42% indicated that two years of experience would be an improvement to the existing NCMA requirement of one year.

Question 3. Is this difference important? Why?

Specific Comments. Some advocates of the more stringent requirements believed that experience was the most important requirement relating to certification. Respondents said that even the most basic contracting actions are becoming more and more complex and that additional experience would enhance the ability of Level 1 personnel to perform the mission effectively. They stated that one year is "the ever-changing environment in Government contracting is simply too complex these days to develop a significant level of expertise in less than two years," and that "experience

counts a lot because the real world doesn't always follow along textbook guidelines." Another interesting observation was that the "first year is spent in school (procurement courses) as opposed to 'doing contracting'." Opponents of the more stringent requirements of the ideal model believed that individuals "develop at different paces" and that personnel should be allowed to "advance at their own speed." They stated that longer experience requirements "would make everyone equal without allowing room for the 'go getters'." Others stated that "experience time minimums are not truly reflective of what the best people can learn."

The research team recognizes that the questions contained in this survey could have possibly been interpreted differently among the various stakeholders; however, no such evidence of multiple interpretations was found to exist. Granted, the phrase "measure up" is used in the majority of questions throughout this survey and could be interpreted in multiple ways when used in an open-ended type question. However, the responses available to the respondents (i.e., better, worse, similar), in these forced response type questions, provided a control mechanism to force respondents to compare the ideal model with the existing certification programs and identify whether they viewed it as better or worse. Follow up questions, such as Question 3 above, were asked to provide respondents an opportunity to support their decisions in the previous questions. The research team noted no discrepancies between the individual choices made to the forced response questions with the comments provided to the open ended questions. In every instance, the comments supported their decision. Based upon this analysis and rationale the research team is confident that the stakeholders held a common understanding the questions asked throughout this instrument and answered accordingly.

Question 4. How do the Level 2 experience requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	9%
Worse	38%
Similar	11%
Better	33%
Much Better	5%
No Response	4%

Analysis. The responses indicate that stakeholders do not view this portion of the model to be better than the existing APDP requirements as 47% indicated that five years of contracting experience would in fact be worse than the existing APDP requirement of two years.

Question 5. How do the Level 2 experience requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	8%
Worse	39%
Similar	15%
Better	29%
Much Better	5%
No Response	4%

Analysis. The responses indicate that stakeholders do not view this portion of the model to be better than the existing NCMA requirements as 47% indicated that five years of contracting experience would in fact be worse than the existing NCMA requirement of two years.

Question 6. Is this difference important? Why?

Specific Comments. Respondents opposed to this difference between the Ideal Model and the existing certification programs again pointed to the possibility that such a restraint will prevent "fast burners" from escalating through the ranks. One comment read "You will hold back the high flyers who are your future leaders." Other opponents expressed their opinions that the contracting workforce is comprised of a large group of employees who are eligible, or almost eligible for retirement. When they retire it will create a void in Level 2 personnel and more stringent experience requirements will prevent many personnel from achieving Level 2 status in time to fill the void. Many advocates of the Ideal Model experience requirements stated that the requirements of the existing programs were not high enough. One commented that, "Two years of experience to achieve Level 2 certification in a 3-level program is ridiculous. There's little distinction between entry-level personnel and seasoned Contracting Officers." Similarly, another stakeholder said, "Additional time requirement would attach more significance to Level 2. Currently, you can receive a warrant w/Level 2 experience. Increasing the time to five years would ensure a more 'seasoned' Contracting Officer." Another stated, "How can you say you are a Certified Professional Contracts Manager when you have less than five years in the business? The same thing goes for Level 2 APDP. Passing schools is not enough. Depending on the area you are in, even five years may not be adequate." Others commented that "More experience in the field will produce a more knowledgeable work force."

Question 7. How do the Level 3 experience requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	15%
Worse	33%
Similar	9%
Better	31%
Much Better	8%
No Response	4%

Analysis. The responses indicate that stakeholders do not view this portion of the model to be better than the existing APDP requirements as 48% indicated that ten years of contracting experience would in fact be worse than the existing APDP requirement of four years.

Question 8. Is this difference important? Why?

Specific Comments. Opponents of these more stringent experience requirements for Level 3 called the requirements excessive. One commented, "A Captain or GS-11/12 should not be deprived of a Level 3 certification because they have 8 or 9 years experience. These people may be able to adequately serve as Flight Commanders, Squadron Commanders, or Division Chiefs." Other comments were similar to those of the Level 2 requirements, "The acquisition workforce is aging. We need to move employees to Level 3 as quickly as possible. Ten years experience is too long." Advocates of the Ideal Model experience requirements felt that four years was simply not enough time to achieve the highest level of certification in a career field. One commented, "A person having four years experience, a Bachelors and some additional classes can be certified at the highest level possible in contracting. I consider the 'highest level possible' as a benchmark. Is this the benchmark the Air Force wants to maintain?"

Question 9. How do the Level 1 education requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	8%
Worse	32%
Similar	33%
Better	18%
Much Better	7%
No Response	2%

Analysis. The responses indicate that stakeholders do not view this portion of the model to be better than the existing APDP requirements as 40% of the respondents indicated that the requirement for a bachelor's degree is worse or much worse than the APDP requirement for either a bachelor's degree, 24 business related semester hours, or 10 years of contracting experience.

Question 10. How do the Level 1 education requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	6%
Worse	23%
Similar	17%
Better	32%
Much Better	19%
No Response	3%

Analysis. The responses indicate that stakeholders view this portion of the model as an improvement to the existing NCMA requirements as 51% of the respondents indicated that the requirement for a bachelor's degree is better or much better than the NCMA requirement of one year of college.

Question 11. Is this difference important? Why?

Specific Comments. Advocates of these differences stressed that a bachelor's degree is critical to entering the contracting career field. One stated, "No one should enter the contracting field in today's business environment with less than a bachelor's degree." Others felt the requirement of a bachelor's degree without the business credits opened up the career field. One comment read, "Anyone with a college degree could get their foot in the door, not just business majors or minors." Another stated, "Some of our best acquisition professionals are liberal arts graduates. They come with an open mind and are very trainable. As they progress, the attainment of business education is more important and meaningful. It should not be a prerequisite for the more basic certification level. Conversely, one response stated that "A bachelor's should not be required for Level 1. This would exclude many qualified personnel with less education." In a comparison to the NCMA requirements, another felt that "a bachelor's degree should be required for CACM also." Those stakeholders opposed to the different requirements of the Ideal Model felt the business related credits of the APDP program were vital. One stakeholder commented, "A bachelor's degree in history/political science/zoology, etc. has little or no bearing on contracting." A similar comment stated, "Having a degree with no specific requirement for business courses is like not requiring a degree. You need the business/management courses."

Question 12. How do the Level 2 education requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	5%
Worse	22%
Similar	52%
Better	14%
Much Better	5%
No Response	2%

Analysis. The education requirements for Level 2 for both the Ideal Model and the APDP program are identical to those requirements for Level 1. However, instead of viewing the requirements worse or much worse as they did for the Level 1 evaluation, 52% of the respondents viewed this requirement as similar or equal.

Question 13. How do the Level 2 education requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	4%
Worse	10%
Similar	68%
Better	10%
Much Better	4%
No Response	4%

Analysis. The Level 2 education requirements under the Ideal Model and the NCMA program are identical. Therefore, 68% of respondents viewed the requirements as being similar.

Question 14. Is this difference important? Why?

Specific Comments. Comments were similar in nature to those from Question 14. This is likely due to the fact that the requirements are similar.

Question 15. How do the Level 3 education requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	9%
Worse	25%
Similar	51%
Better	8%
Much Better	4%
No Response	3%

Analysis. The education requirements for Level 3 of both the Ideal Model and the APDP program are identical to those requirements for Levels 1 and 2. However, instead of viewing the requirements worse or much worse as they did for the Level 1 evaluation, 51% of the respondents viewed this requirement as similar or equal.

Question 16. Is this difference important? Why?

Specific Comments. Again, because the requirements are similar to those for Levels 1 and 2, comments were very similar in nature to those from Questions 11 and 14. However, several comments were made that stated the education requirement for the Ideal Model should contain business-related studies. Those same respondents suggested that Level 3 require a master's degree in Procurement/Contracting.

Question 17. How do the Level 1 course requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	5%
Worse	25%
Similar	19%
Better	39%
Much Better	9%
No Response	3%

Analysis. 48% of respondents viewed procurement courses under the ideal model as an improvement to the required courses under the APDP program. Thus, they believe that Contract Law and Contract Negotiation classes should be required for Level 1 certification in addition to Contracting Fundamentals and Contract Pricing.

Question 18. How do the Level 1 course requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	2%
Worse	19%
Similar	8%
Better	40%
Much Better	28%
No Response	3%

Analysis. The responses indicate that stakeholders view this portion of the model as an improvement to the existing NCMA procurement course requirements as 68% indicated that the requirement for four classes under the Ideal Model is better or much better than the requirement for one acquisition course under the NCMA program.

Question 19. Is this difference important? Why?

Specific Comments. Advocates of the procurement course requirements for the Ideal Model believed it to be important that all of the basic courses were completed prior to any certifications. As one respondent stated, "I believe it is important to have the fundamentals out of the way prior to achieving any Level 1 certification." Another stated, "The more courses taken at earlier stages in one's career, the better the individual will perform." Several conveyed that the courses required under the Ideal Model are the right mix of courses needed. One respondent stated "The courses proposed are the right ones to start and doable within the first year" while another stated "The

proposed courses appear to be an appropriate minimum for 'professional' certification." Several comments were course specific: "Great idea! Law and negotiations should be taught at this fundamental level." "Important to give newcomers a negotiation course. Less important to give them a law course." "The law course is probably the most important one we get." Opponents felt that current requirements were stringent enough. One stated that "Adding the two additional courses puts a great deal of stress on a trainee who probably is not using those skills yet."

Question 20. How do the Level 2 course requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	1%
Worse	10%
Similar	65%
Better	20%
Much Better	3%
No Response	1%

Analysis. The results indicate that most stakeholders (68%) view the procurement course requirements between the Ideal Model and APDP very similar.

Question 21. How do the Level 2 course requirements of the proposed program measure up to those of the NCMA program?

Responses.

Much Worse	2%
Worse	12%
Similar	42%
Better	26%
Much Better	10%
No Response	8%

Analysis. The results indicate that the largest portion of stakeholders (42%) view the procurement course requirements between the Ideal Model and NCMA very similar even though the NCMA program at this level requires eight procurement-related courses.

Question 22. Is this difference important? Why?

Specific Comments. Comments received were similar to those in Question 19. However, with regard to the NCMA courses, many respondents were hesitant to express an opinion without knowing what specific courses are required. As one respondent put it, "May be better or worse – depends on subjects and quality."

Question 23. How do the Level 3 course requirements of the proposed program measure up to those of the APDP program?

Responses.

Much Worse	0%
Worse	21%
Similar	14%
Better	46%
Much Better	14%
No Response	5%

Analysis. The responses indicate that stakeholders view this portion of the model as an improvement to the existing APDP Level 3 procurement course requirements as 60% of the respondents indicated that the requirement for the four classes under the Ideal Model is better or much better than the two courses required under the APDP program.

Question 24. Is this difference important? Why?

Specific Comments. Many comments were simply of the opinion that more is better at every level of certification when it comes to education. More specific

comments were "Continuing education provides assurance that you remain current and grow" and "At Level 3, contracting personnel need more course work to focus them on the fact that they are in the positions which must be strategic and forward-thinking." An opponent stated, "At this point in contracting, you should be attending seminars and professional development voluntarily. DoD 'force feeding' reaches a point of diminishing returns with two additional courses."

Question 25. Is the requirement to pass a comprehensive examination an enhancement relative to the existing APDP program?

Responses.

Much Worse	14%
Worse	26%
Similar	11%
Better	34%
Much Better	8%
No Response	7%

Analysis. The largest portion of respondents (42%) indicated that the requirement to pass a comprehensive examination is better than the lack of such a requirement under the APDP program. However, almost as many respondents (40%) evaluated this requirement as worse or much worse.

Question 26. Is this difference important? Why?

Specific Comments. Advocates of the requirement for a comprehensive examination felt that such a requirement would ensure a knowledgeable workforce. One response commented that "This would provide a 'standard' baseline' of knowledge for all to meet. As a profession, acquisition should confine entry to the most qualified people." Another commented that "An examination demonstrates proficiency. If an individual is not proficient, no level of certification should be issued to that individual." Another

comment addressed knowledge comprehension, stating "It (a comprehensive examination) illustrates that the knowledge has been integrated and not merely duplicated for a test." Many opponents of this requirement commented on the possibility that some individuals are simply not proficient at taking test. One commented that "You could have one of the most experienced, knowledgeable contracting individuals working with you, but they may not test well." Other comments made doubted that a "fair" test could be developed, such as "The contracting field is so broad that I don't know how you would devise a 'fair' exam – many of us work in Post, Camp and Station and have to deal with parts of the FAR that are obviously written by and for the systems folks."

Question 27. Is the proposed re-certification requirement an enhancement relative to the existing APDP program?

Responses.

Much Worse	10%
Worse	20%
Similar	13%
Better	43%
Much Better	11%
No Response	3%

Analysis. The responses indicate that most stakeholders believe the requirement for re-certification under the Ideal Model is an improvement to the lack of such re-certification requirements under the APDP program as 54% indicated this requirement to be better or much better.

Question 28. Is this difference important? Why?

Specific Comments. Advocates focused on the need for the workforce to stay current. One commented that "Periodic reviews would keep skills sharp" while another stated "re-certification maintains competency of the workforce." Others pointed

to the requirement for re-certification in other fields, "Professional career fields all require ongoing certification – so should contracting." Opponents felt that re-certification requirements would present too much of a burden to personnel. One commented, "It is already difficult to do my job and keep up with changing requirements. I don't want to worry about re-certifying every five years."

Question 29. How does the proposed duration of certification measure up to that of the existing APDP program?

Responses.

Much Worse	11%
Worse	30%
Similar	10%
Better	36%
Much Better	9%
No Response	4%

Analysis. The responses indicate that the largest portion of stakeholders (45%) view a certification length of five years under the Ideal Model as better or much better than the indefinite certification under the APDP program. However, almost as many respondents (41%) rated this requirement worse or much worse.

Question 30. How does the proposed duration of certification measure up to that of the existing NCMA program?

Responses.

Much Worse	4%
Worse	9%
Similar	76%
Better	6%
Much Better	1%
No Response	4%

Analysis. The requirements under the Ideal Model and the NCMA program are identical, explaining the fact that 76% of respondents viewed the requirements similar.

Question 31. Is this difference important? Why?

Specific Comments. Advocates of certification duration requirements for the Ideal Model point out the dynamic environment of contracting. One commented, "Certification on a smaller scale would be better every three years, especially with the number of reforms and law changes. This is not a static career field." Others point out that such a requirement forces personnel to train, "If you go for a longer period, people tend to put off until next year the training they need today." Another advocate commented, "A lot has changed in recent years – to that someone certified five or ten years ago should still be certified is risky." Another stated, "If re-certification is dependent upon passing an exam, it would verify skills. If not, it would at least provide for a periodic review of personnel efficiency." Opponents simply saw no need for re-certification as one commented, "Certification should stay indefinite with continuing education and performance as a basis."

Question 32. How do the proposed continuing education requirements measure up to that of the existing APDP program?

Responses.

Much Worse	5%
Worse	20%
Similar	8%
Better	46%
Much Better	16%
No Response	5%

Analysis. The results indicate that most (62%) of the stakeholders view the continuing education requirements of 40 hours per year under the Ideal Model as better or much better than the lack of such requirements under the APDP program.

Question 33. How do the proposed continuing education requirements measure up to that of the existing NCMA program?

Responses.

Much Worse	2%
Worse	24%
Similar	20%
Better	40%
Much Better	8%
No Response	6%

Analysis. The results indicate that the largest portion (48%) of stakeholders view the continuing education requirements of 40 hours per year under the Ideal Model as better or much better than the less stringent continuing education requirements under the NCMA program.

Question 34. Is this difference important? Why?

Specific Comments. Advocates of the Ideal Model's continuing education requirements made comments similar to those in the re-certification question. One stated, "Continuing education require folks to learn new things, stay current and not stagnate." Another commented, "It will force people to leave their desk and look outside the box." Opponents of this requirement did not aim comments at continuing education, rather at the amount of continuing education proposed by the Ideal Model. One referred to 40 hours annually as "unrealistic." Another suggested that "40 hours per year is too much unless there is some way to put a course on the internet each year and make it easy for employees to obtain this education during normal duty hours."

V. Conclusions and Recommendations

Introduction

This chapter presents the research team's findings and conclusions to the five research question posed in this study. Subsequently, the team presents its suggestions for further research.

Conclusions

Research Question 1. How many levels of certification should an ideal contracting certification program contain?

The expert panel strongly supported multiple levels of certification even though a small minority suggested that multiple levels might degrade the prestige of certification. The panel expressed the opinion that multiple levels of certification could effectively be utilized for recognition and motivation purposes. Expert panel members concluded by a narrow margin that three levels of certification should be included in an ideal contracting certification program.

The results indicate that either of the current certification programs would find their proponents based on the definition of the ideal system. The current APDP certification program provides a sufficient number of levels to capture the requirements for progression in the contracting profession. However, the current NCMA certification program may not be sufficient in this respect as it maintains only two levels of professional certification, the CACM and CPCM.

Research Question 2. What should be the education and experience requirements for contracting personnel to attain certification?

Input received early in the study showed a large variation with regard to the number of years of experience that should be required. Information was collected on both a two-level and a three-level certification program. The first research question was answered with the determination for a three-level system. Therefore, only the panel's input for a three-level system will be discussed here.

For the first level of certification the panel concluded by a majority that two years of contracting experience would suffice. Stakeholders strongly agreed with this assessment suggesting that experience requirements under the existing APDP and NCMA programs may be deficient and stressing the importance of experience itself.

The second level of certification was not as strongly supported by either the panel or the stakeholders. The panel soundly concluded that between four and six years experience should be required for Level 2 certification. The most common response was for five years with only slightly less support for four and six years of experience. All of these positions suggest more stringent experience requirements for the second level of certification than required by the existing programs.

The majority of stakeholders disagreed with the expert panel on this position. Stakeholder comments suggested that the reason for such disagreement might be fear of slowing career progression. Several stakeholders believed that this requirement might

hold back "fast burners" in the career field. These results may be due to the difference in relative experience between the two groups.

Results for the third level of certification were much more decisive from the expert panel as they overwhelmingly concluded the requirement for ten years of experience prior to certification at the highest level. Again, the largest portion of stakeholders disagreed with the views of the panel expressing concern over such stringent requirements with respect to career progression. Regardless of the dissenting views expressed by the stakeholders, the ten years of experience determined necessary under the Ideal Model conveys the importance of the expert's belief that a significant amount of experience is required at the highest level of certification. The requirement is far in excess of the experience requirements under the two existing certification programs and demonstrates the need for higher levels of experience prior to certification at the highest level.

While the expert panel was initially divided over the importance of formal education with respect to certification, subsequent rounds of questioning revealed support for this aspect of certification. The panel's determination of requiring a bachelor's degree for every level of certification was supported by stakeholders. However, many stakeholders expressed that a business-related education was still critical in the contracting career field. The requirement for a bachelor's degree at the entry and subsequent levels of certification is a necessary requirement. As expressed by one panel member, it demonstrates the ability to learn. The requirement is very similar to the existing APDP requirement in this area. However, the requirement may demonstrate a potential

shortcoming in the existing NCMA program as there is no requirement for a degree of any kind for entry-level certification within NCMA.

Research Question 3. Should the successful completion of a comprehensive examination be required for contracting personnel to attain certification?

The expert panel reached a strong consensus during the interview process that a comprehensive examination should be required under the ideal certification program. The interview responses were further refined through the Delphi phase of research in which a majority (55%) of panel members identified that such an examination should be required for each level of certification. A small number of panel members (27%) supported a comprehensive examination, but only for the highest level of certification.

These results indicate that the current APDP certification program could possibly be improved by implementing comprehensive examinations for each certification level. Currently, no comprehensive examinations are required at any phase of the APDP program; however, individuals are required to pass curriculum specific examinations while attending required contracting courses.

The current NCMA certification program matches the ideal model with regards to the comprehensive examination requirements. Under the NCMA program, comprehensive testing is required at both levels of certification. The CACM requires the completion of an in-depth multiple choice examination, while the CPCM requires the completion of a six-hour essay response examination. The expert panel strongly felt that a comprehensive examination is a vital part of the ideal contracting certification model, as

it requires individuals to demonstrate their overall contracting knowledge prior to being granted a contracting certification.

The responses to the stakeholder assessment with regards to the comprehensive examination requirement were evenly divided. 42% of the stakeholders surveyed indicated that the inclusion of such a requirement in the ideal model is an improvement over the existing APDP program, while 40% indicated that this requirement makes the ideal model "worse" or "much worse" than the existing APDP program. Based upon the comments provided in response to this question, the research team perceives that stakeholders who are confident in their contracting ability, or who supervise other contracting personnel, tend to favor the idea of the comprehensive examination. The rationale is that ideally this requirement would enhance the overall knowledge level of the contracting field. On the other hand, personnel just entering the contracting field or personnel only concerned with the specifics of their present position, tend to view this requirement as an inconvenience and possibly feel threatened by being called upon to demonstrate a broad knowledge base of Government contracting.

Research Question 4. Should certified contracting personnel be subject to re-certification throughout their contracting career?

The expert panel reached a strong (70%) consensus during the interview process that periodic re-certification should be required under the ideal certification program. The interview responses were further refined through the Delphi phase of research in which the majority (73%) of panel members identified that re-certification should be required

based upon contracting experience and continuing education. 9% of the panel supported re-certification based upon periodic examinations while 18% felt that re-certification should be based upon an examination as well as additional experience and continuing education. 100% of the panel agreed during the Delphi phase that re-certification should be required in some form or another.

These results indicate that the current APDP certification program could possibly be improved by implementing re-certification requirements. Currently, there are no requirements for re-certification under the APDP program. Several comments by the expert panel indicated that they favored a re-certification process, simply to encourage personnel to keep of with the continually changing procurement laws and regulations. The panel felt that this could be accomplished through additional experience and continuing education.

The current NCMA certification program is very similar to the ideal model with regards to re-certification requirements. Under the NCMA program, re-certification is required for both the CACM and CPCM and is also based on experience and continuing education. Both of the NCMA certifications are valid for 5 years, and continuing education requirements of 60 hours over this five year period, with 10 hours being completed within the last 18 months are required for re-certification.

Under the ideal model, the expert panel also adopted a five-year re-certification period; however, the continuing education requirements are more demanding that those required by NCMA. The expert panel reached a strong consensus (73%) that an average of 40 hours per year of continuing education should be required for re-certification. This is equivalent to one, one-week course per year. The expert panel felt that this continuing

education requirement will assist individuals with keeping abreast of changes in the contracting field, while not keeping them out of the office for prolonged periods of time.

The responses from the stakeholder assessment supported the implementation of re-certification requirements. A majority (54%) of the stakeholders surveyed indicated that the inclusion of such a requirement in the ideal model is an improvement over the existing APDP program, while just 30% indicated that this requirement makes the ideal model "worse" or "much worse" than the existing APDP program. In addition, when asked to compare the ideal model's five-year re-certification period with the indefinite certification period of the current APDP program, 45% favored the five-year period, while 41% preferred the indefinite certification period. Although not a majority consensus, the research team concludes that more stakeholders prefer a five-year re-certification period over the existing APDP system. With regards to the amount of continuous education required for re-certification, 62% of the stakeholders identified the 40-hour per year requirement of the ideal model over the non-existent requirement of APDP. In addition, 48% of the stakeholders preferred the 40-hour per year requirement over the 60-hour/5-year requirement of NCMA. 26% preferred the NCMA requirements for continuing education.

Based upon the comments provided in response to this question, the research team perceives that the majority of stakeholders want to keep abreast of changes in the contracting field, and want to be afforded the opportunity to attend contracting courses even after they attain a certain certification level. The research team perceives that some stakeholders may have been rushed through classes, granted certification, and then not afforded the opportunity to attend any future classes, because they are already certified.

The research team recognizes that funding, training allocations, and mission requirements, often dictate when personnel can attend training courses; however, both the expert panel and the stakeholders seem to agree on the importance of continuing education and re-certification.

Research Question 5. What aspects of the ideal certification program are unique to existing contracting certification programs?

As identified in Table 8, Comparison of the Ideal Model with APDP and NCMA, the ideal model is basically a hybrid of the two existing contracting certification programs. The research team, through the use of the expert panel, did not identify any truly unique characteristics for the ideal model that were not already implemented in either the APDP or NCMA programs.

The research team attempted to gain a unique and innovative perspective from the expert panel during the interview process by asking open-ended interview style questions. The research team felt that by conducting interviews prior to formulating the Delphi questionnaire, the expert panel would be free to express their own ideas without being guided or limited in their responses. Unfortunately, based upon the interview responses the expert panel appeared to have pre-conceived notions based upon the existing certification programs.

As a result, the ideal model does not contain any elements that are truly unique to both existing contracting certification programs. While certain elements of the ideal model may be unique to an existing program (i.e., the comprehensive examination requirement

when compared with APDP), no elements are unique to all programs (i.e., NCMA already requires comprehensive examinations).

While the ideal model does not introduce any truly unique elements to the certification process, the research team feels that it does contain the best elements of each of the existing programs. This is supported by both the expert panel and the stakeholder's assessment.

Recommendations

Based upon the input provided by the expert panel, it would appear that the two existing certification programs combined (APDP and NCMA) adequately represent all the elements of an ideal contracting certification program. However, individually, neither of the existing programs are necessarily ideal in themselves. For example, NCMA requires comprehensive examinations and re-certification, but is only comprised of two certification levels. In contrast, APDP is comprised of three certification levels, but does not incorporate comprehensive examinations or re-certification requirements.

The research team believes, based upon the research conducted, that the NCMA program is closer to matching the ideal model, than the APDP system. However, both programs could make improvements towards matching the ideal model. The following recommendations are provided for each of the two existing programs.

Levels of Certification. Based upon input provided by the expert panel, it would seem that three levels of certification are considered to be ideal. APDP currently offers three levels of certification, and thus it is recommended that they continue to offer three levels. NCMA currently offers two levels of certification; however, they have recently

implemented a Simplified Acquisition Specialist credential that is not necessarily a certification level, but is a credential that can be achieved by personnel not yet eligible or willing to certify as a CACM or CPCM. The research team recommends that this Simplified Acquisition credential be converted to an entry-level certification by expanding the knowledge base beyond simplified acquisition to encompass a slightly broader contracting knowledge base. This modification would provide NCMA with the three certification levels determined to be ideal by the expert panel.

Experience. It is recommended that the experience required to attain each certification level under APDP or the NCMA program be increased and spread out more over an individual's contracting career. Under APDP, an individual is eligible for the highest level of certification after only four years of contracting experience (two years experience for the highest NCMA certification). The research team concludes, based upon the input received by the expert panel, that four years of experience is not enough time to be considered an expert in the field, and thus should not suffice to achieve the highest level of certification. While the results of the stakeholder assessment indicated that stricter experience timelines would detract from the APDP and NCMA programs, based upon the comments provided, the research team perceived that many stakeholders were more concerned that the increased experience requirement would detract from their own career progression than they were about implementing a better system. The research team recommends that APDP and NCMA both consider implementing stricter experience requirements for each level of certification (i.e., 2 years, 5 years, and 10 years per the ideal model).

Formal Education. It is recommended that that the formal education requirements for certain levels of certification be increased under APDP and the NCMA program. Under APDP, it is possible for an individual to attain the highest level of certification while possessing only 24 business related semester hours of formal education. The research team concludes, based upon the input received from the expert panel, that a minimum of a Bachelor's degree should be required for each level of certification. While no restrictions of degree type (i.e., business, finance, etc.) are specified, a degree in itself can be used to assess an individual's desire and ability to learn. NCMA currently requires a Bachelor's degree to attain the highest level of certification (CPCM), but only requires one year of college to attain the first certification level (CACM). For the same reasons stated above, the research team recommends that the formal education requirement for the CACM should be heightened to require a Bachelor's degree.

Procurement Related Courses. The procurement related courses required for each level of certification under the ideal model closely resemble the requirements for APDP certifications with few exceptions. The most noted exception is that the expert panel identified the need for contract law and contract negotiation courses to be required before an individual can attain Level One certification. Presently Contract Law is required for APDP Level Two, and Contract Negotiation is not presently required for certification (an introduction to contract negotiation is presently included in the DAU Contract Pricing Course). Under NCMA, only one unspecified acquisition course is required for the CACM certification. For Level Two certification, the ideal model incorporates a specialty course (i.e., systems acquisition, construction, value engineering, etc.) in addition to the required APDP courses. Presently, no such requirement exists under the

APDP system. Under NCMA, eight unspecified acquisition courses are required for the CPCM certification. Finally, for Level Three, the ideal model includes such courses as Advanced Topics in Acquisition, Management of Contracting Activities, and Contract Process Improvements. Currently, the only courses required for APDP Level Three are Executive Contracting and Management for Contract Supervisors. The stakeholder assessment supported the ideal model's course requirements as improvements to both the APDP and NCMA programs. It is therefore recommended that APDP adopt these changes to the procurement course requirements for the three levels of certification. In addition, it is recommended that NCMA adopt similar requirements and list specific courses required for the various levels of certification.

Comprehensive Examination. The ideal model includes a requirement for the successful completion of a comprehensive examination at every level of certification. NCMA currently requires comprehensive examinations for each certification level, while APDP does not. The stakeholder assessment indicated a slight preference that the incorporation of a comprehensive examination would be a betterment to the existing APDP program. It is therefore recommended that APDP examine the possibility of instituting such a requirement for the demonstration of knowledge in order to enhance the existing program.

Re-certification. The ideal model includes a requirement for mandatory re-certification every five years. NCMA currently incorporates this requirement, while re-certification requirements are not presently included in the APDP system. The stakeholder assessment indicated a strong preference that the re-certification requirements would be an improvement to the existing APDP system. It is therefore

recommended that APDP examine the possibility of instituting a five-year re-certification period to help ensure that the contracting workforce keeps current in the contracting profession.

The ideal model also mandates an average of 40 hours annually of continuing contracting education in order to be eligible for re-certification. The NCMA re-certification system requires a total of 60 hours over the five-year re-certification period, with 10 of those hours being acquired within the last 18 months of certification. Since APDP does not have encompass re-certification, there is no formal requirement for continuing education. Obviously, the ideal model incorporates more stringent requirements for continuing education than NCMA or APDP. The stakeholder assessment indicated that the more stringent requirements for continuing education would improve both the existing APDP and NCMA programs. It is therefore recommended that both programs incorporate a continuing education requirement of 40 hours per year. This requirement will help ensure that the contracting workforce has the opportunity to attend courses, hone skills, and keep current in a changing environment.

Suggestions for Further Study

This study accomplished the stated objectives by providing answers to the original five research questions. However, in formulating and presenting the ideal model, several questions arose as to the implementation of such a model. For example, such questions that remain to be answered are what would be the cost impact of implementing a comprehensive examination under the APDP program? What would the test be comprised of? Who would be responsible for the administration of the examinations?

Should previously certified individuals be required to take the examination? How would de-certification be implemented if a person failed the examination? Would this have a negative impact performance reports? These questions evolve from just one element of the ideal model. The research team feels that a follow-on study geared toward the implementation of the ideal model would provide answers to these questions as well as others, and identify the actual feasibility of implementing such a model.

Another suggestion for future research might be to investigate the possibilities of outsourcing the APDP contracting certification program. In an era of A-76 studies and privatization, it may prove cost effective for the Government to rely on NCMA to be the certifying authority for contracting personnel. One major cost savings would appear to be alleviating the administration costs of the APDP system. In addition, since the NCMA program, with minor modifications, could epitomize the newly formulated ideal model, another cost savings might be that APDP would not have to go through the costs of implementing the recommended changes stated above. Furthermore, if outsourcing the APDP contracting certifications prove beneficial, this study could pave the way for outsourcing other APDP certifications such as logistics, acquisitions, and/or program management.

A final recommendation for future research involves duplicating the model formulation conducted in this thesis, using a different expert panel and comparing the results with the ideal model presented above. While the expert panel reached a majority consensus on each element of the ideal model, several elements were decided by a very small margin. For example, the expert panel preferred three levels of certification over a two-level program 54% to 45%. If just two panel members would have voted differently,

the ideal model may have had a totally different outcome. By replicating this study using a larger expert panel (i.e., 30) and reaching a 70% consensus on each element of certification, the ideal model presented herein can either be supported or disputed.

Summary

The Defense Acquisition Workforce Improvement Act (DAWIA) of 1990 requires Government contracting personnel to possess a level of certification commensurate with their grade and position in order to continue career progression in the contracting field. The fundamental purpose behind DAWIA and contracting certifications is to ensure that the contracting community has a qualified, knowledgeable, and experienced personnel corps. Mandatory certification requirements are presently governed by the Acquisition Professional Development Program (APDP), as instituted by DAWIA; however, the National Contract Management Association (NCMA) also sponsors a similar, contracting certification program.

The findings of this study indicate that the ideal contracting certification program, according to an expert panel of senior contracting officials and supported by a stakeholder assessment of contracting personnel, is actually a hybrid of the two existing certification programs. The ideal contracting certification program does not bring any unique aspects to the certification process, but rather incorporates the best elements of each of the two existing programs. In addition, the ideal contracting certification program encompasses stricter requirements on several elements of certification (i.e., years of experience, formal education, etc.), and did not relax a single element from either of the existing programs. This indicates to the research team that senior

contracting officials as well as viable stakeholders recognize the importance of each element of certification and support the stricter requirements that will potentially lead to a more qualified and knowledgeable workforce.

The impact of this study was aimed at ensuring that certified contracting professionals possess the levels of education, experience, and contracting knowledge commensurate with their certification level. By identifying potential deficiencies in the existing certification programs, recommendations were made to both NCMA and senior government contracting personnel for potential improvements in both programs. The formulation of the ideal contracting certification model will potentially lead to a more qualified contracting field in both the public and private sector.

Appendix A: List of Expert Panel Members

1. Colonel Steven Kahne, OC-ALC/PK Deputy Director
2. Colonel David K. Hedges, OO-ALC/PK Deputy Director
3. Colonel Steven H. Sheldon, ESC/PK Director
4. Colonel Pamela R. Casey, ASC/PK Director
5. Dr. Kenneth Oscar, SARDA ARMY
6. Mr. Elliott Branch, HQ NAVY
7. Mr. John Webb, AFIT/LAA, GS-14
8. Mr. Thomas Wells, ESC/PK Deputy Director
9. Mr. Morris Goodrich, OO-ALC/PK Director
10. Mr. Jerry C. Fowler, AAC/PK Deputy Director
11. Mr. Temple Bowling, AEDC/PK Director
12. Mr. Joseph Farrey, ASC/PKX, GS-15
13. Mr. Thomas C. Larkin, AFIT/LSP (Prior Army Contract Experience), GS-13

Appendix B: Initial Interview for Expert Panel

1. Should the ideal contracting certification program have multiple levels of certification? Why or why not? If yes, how many levels do you believe would be appropriate and why?

2. How many years of contracting experience should an individual have to qualify for certification? Please identify the years of experience required with each level of certification identified in Question 1.

3. What levels of education should an individual have to qualify for certification? Please identify the education level required with each level of certification identified in Question 1.

4. What kinds of contracting related courses (fundamentals, law, negotiation, etc.) should an individual complete prior to being certified? Should different types of courses correspond to different levels of certification?

5. Should certification under the ideal contracting certification program require an individual to pass a comprehensive examination? Why or why not?

6. Under an ideal contracting certification program, should periodic re-certification be required for an individual to retain his/her certification? Why or why not? If you believe re-certification should be required, how often should this be accomplished and what should it entail?

Appendix C: Delphi Questionnaire

1. How many levels of certification do you believe would be appropriate for the ideal contracting certification program?

_____ Two Levels (30%)

_____ Three Levels (40%)

2. How many years of contracting experience should an individual have to possess in order to qualify for certification under a TWO-LEVEL program?

LEVEL ONE:

_____ Three Years (33.3%)

_____ Four Years (33.3%)

_____ Five Years (33.3%)

LEVEL TWO:

_____ Seven Years (33.3%)

_____ Ten Years (66.7%)

3. How many years of contracting experience should an individual have to possess in order to qualify for certification under a THREE-LEVEL program?

LEVEL ONE:

_____ No Experience (25%)

_____ Two Years (25%)

_____ Three Years (50%)

LEVEL TWO:

_____ Three Years (25%)

_____ Four Years (25%)

_____ Five Years (25%)

_____ Six Years (25%)

LEVEL THREE:

_____ Five Years (25%)

_____ Eight Years (25%)

_____ Ten Years (50%)

4. What level of education should an individual have to possess in order to qualify for certification under a TWO-LEVEL program?

LEVEL ONE:

_____ B.S. / B.A. (100%)

_____ Other – Please Specify

LEVEL TWO:

_____ Masters Degree (66.7%)

_____ Additional Professional Certification (33.3%)

_____ Other – Please Specify

5. What level of education should an individual have to possess in order to qualify for certification under a THREE-LEVEL program?

LEVEL ONE:

_____ B.S. / B.A. (50%)

_____ Education levels are not relevant (50%)

LEVEL TWO:

_____ B.S. / B.A. (50%)

_____ Education levels are not relevant (50%)

LEVEL THREE:

_____ B.S. / B.A. (50%)

_____ Education levels are not relevant (50%)

6. Please indicate to which level of certification the following contracting courses should be required under a TWO-LEVEL program.

Contracting Fundamentals:

_____ Level One _____ Level Two _____ Not Relevant

Contract Pricing:

_____ Level One _____ Level Two _____ Not Relevant

Specialty Course (Depending on Assignment):

_____ Level One _____ Level Two _____ Not Relevant

Intermediate Contracting:

_____ Level One _____ Level Two _____ Not Relevant

Intermediate Pricing:

_____ Level One _____ Level Two _____ Not Relevant

Contract Law:

_____ Level One _____ Level Two _____ Not Relevant

Contract Negotiation:

_____ Level One _____ Level Two _____ Not Relevant

Executive Contracting:

_____ Level One _____ Level Two _____ Not Relevant

Advanced Topics in Acquisition:

_____ Level One _____ Level Two _____ Not Relevant

Management of Contracting Activities:

_____ Level One _____ Level Two _____ Not Relevant

Contract Process Improvements:

_____ Level One _____ Level Two _____ Not Relevant

7. Please indicate to which level of certification the following contracting courses should be required under a THREE-LEVEL program.

Contracting Fundamentals:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Contract Pricing:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Specialty Course (Depending on Assignment):

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Intermediate Contracting:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Intermediate Pricing:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Contract Law:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Contract Negotiation:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Executive Contracting:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Advanced Topics in Acquisition:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Management of Contracting Activities:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

Contract Process Improvements:

_____ Level 1 _____ Level 2 _____ Level 3 _____ N/R

8. Should certification under the ideal contracting certification program require an individual to pass a comprehensive examination?

_____ Yes, for ALL levels of certification (60%)

_____ Yes, but only for the most advanced certification level (10%)

_____ No, an examination would not be beneficial (30%)

9. Under an ideal contracting certification program, should periodic RE-CERTIFICATION be required for an individual to retain his/her certification?

_____ Yes, via a periodic examination (10%)

_____ Yes, via experience and continuing education (50%)

_____ Yes, via experience, continuing education, and an examination (10%)

_____ No (30%)

10. Assuming a contracting certification program with mandatory re-certification, how long should an individual's certification remain valid?

_____ 1 year

_____ 2 years

_____ 3 years

_____ 4 years

_____ 5 years

11. Assuming a contracting certification program with mandatory re-certification, how much continuing education (on average) should be required to maintain an individual's certification?

_____ 30 hours per year (10%)

_____ 40 hours per year (20%)

_____ Other – please specify

_____ hours per year

Appendix D: Stakeholder Assessment Questionnaire

Please use the following table to answer questions 1-8.

Requirements	Ideal Model	APDP	NCMA
Experience			
Level 1	2 years	1 year	1 year
Level 2	5 years	2 years	2 years
Level 3	10 years	4 years	N/A

1. How do the Level 1 experience requirements of the proposed program measure up to those of the APDP program?

   Much Worse Worse Similar Better Much Better

2. How do the Level 1 experience requirements of the proposed program measure up to those of the NCMA program?

   Much Worse Worse Similar Better Much Better

3. Is this difference important? Why?

4. How do the Level 2 experience requirements of the proposed program measure up to those of the APDP program?

   Much Worse Worse Similar Better Much Better

5. How do the Level 2 experience requirements of the proposed program measure up to those of the NCMA program?

   Much Worse Worse Similar Better Much Better

6. Is this difference important? Why?

7. How do the Level 3 experience requirements of the proposed program measure up to those of the APDP program?

   Much Worse Worse Similar Better Much Better

8. Is this difference important? Why?

Please use the following table to answer Questions 9-16.

Requirements	Ideal Model	APDP	NCMA
Formal Education			
Level 1	Bachelor's Degree	Bachelors Degree or 24 business related semester hours, or 10 years experience	1 year college
Level 2	same as above	same as above	Bachelor's Degree
Level 3	same as above	same as above	N/A

9. How do the Level 1 education requirements of the proposed program measure up to those of the APDP program?

   Much Worse Worse Similar Better Much Better

10. How do the Level 1 education requirements of the proposed program measure up to those of the NCMA program?

    Much Worse Worse Similar Better Much Better

11. Is this difference important? Why?

12. How do the Level 2 education requirements of the proposed program measure up to those of the APDP program?

    Much Worse Worse Similar Better Much Better

13. How do the Level 2 education requirements of the proposed program measure up to those of the NCMA program?

    Much Worse Worse Similar Better Much Better

14. Is this difference important? Why?

15. How do the Level 3 education requirements of the proposed program measure up to those of the APDP program?

Much Worse Worse Similar Better Much Better

16. Is this difference important? Why?

Please use the following table to answer Questions 17-24.

Requirements	Ideal Model	APDP	NCMA
Procurement Courses			
Level 1	Contracting Fundamentals, Contract Pricing, Contract Law, Contract Negotiation	Contracting Fundamentals, Contract Pricing	One acquisition course
Level 2	Intermediate Contracting, Intermediate Pricing, Specialty Course	Intermediate Contracting, Intermediate Pricing, Contract Law	Eight procurement-related courses
Level 3	Executive Contracting, Advanced Topics in Acquisition, Management of Contracting Activities, Contract Process Improvements	Executive Contracting, Management for Contract Supervisors	N/A

17. How do the Level 1 course requirements of the proposed program measure up to those of the APDP program?

Much Worse Worse Similar Better Much Better

18. How do the Level 1 course requirements of the proposed program measure up to those of the NCMA program?

Much Worse Worse Similar Better Much Better

19. Is this difference important? Why?

20. How do the Level 2 course requirements of the proposed program measure up to those of the APDP program?

Much Worse Worse Similar Better Much Better

21. How do the Level 2 course requirements of the proposed program measure up to those of the NCMA program?

Much Worse Worse Similar Better Much Better

22. Is this difference important? Why?

23. How do the Level 3 course requirements of the proposed program measure up to those of the APDP program?

Much Worse Worse Similar Better Much Better

24. Is this difference important? Why?

Please use the following table to answer Question 25-26.

	Ideal Certification Model	APDP	NCMA
Comprehensive Examination	Yes, all levels	No	Yes, both levels

25. Is the requirement to pass a comprehensive examination an enhancement relative to the existing APDP program?

Much Worse Worse Similar Better Much Better

26. Is this difference important? Why?

Please use the following table to answer Questions 27-28.

	Ideal Model	APDP	NCMA
Re-certification	Yes, via experience and continuing education	No	Yes, via experience and continuing education

27. Is the proposed re-certification requirement an enhancement relative to the existing APDP program?

Much Worse Worse Similar Better Much Better

28. Is this difference important? Why?

Please use the following table to answer Question 29-31.

	Ideal Model	APDP	NCMA
Duration of Certification	5 years	Indefinite	5 years

29. How does the proposed duration of certification measure up to that of the existing APDP program?

Much Worse Worse Similar Better Much Better

30. How does the proposed duration of certification measure up to that of the existing NCMA program?

Much Worse Worse Similar Better Much Better

31. Is this difference important? Why?

Please use the following table to answer Question 32-34.

	Ideal Model	APDP	NCMA
Continuing Education	40 hours per year	None	60 hours over a 5-year span with 10 of those 60 completed within the last 18 months.

32. How do the proposed continuing education requirements measure up to that of the existing APDP program?

Much Worse Worse Similar Better Much Better

33. How do the proposed continuing education requirements measure up to that of the existing NCMA program?

Much Worse Worse Similar Better Much Better

34. Is this difference important? Why?

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Captain Daniel I. Dunn was born on 3 February 1970 in Perryton, Texas. In 1988, he graduated from Monahans High School, Monahans, Texas. In 1992, he graduated from McMurry University in Abilene, Texas with a Bachelor of Business Administration in Accounting. He received his commission on 11 August 1994 after attending Officer Training School.

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His first officer assignment was with the 38th Logistics Squadron, Contracting Flight, Tinker AFB, Oklahoma. While stationed at Tinker, he served as a buyer in the Communication Services Branch and was then appointed Officer in Charge of the Commodities Branch. During this period, he was named Electronic Systems Center's Contracting Officer of the Year for specialized contracting. He concluded his tour at Tinker by being granted a contracting officer's warrant and working on the B-2 Bomber program at the Oklahoma City Air Logistics Center. Captain Lorton received his M.B.A. with honors from Oklahoma City University in May 1997, and entered the school of Logistics and Acquisition Management, Air Force Institute of Technology, in May 1998.

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13. ABSTRACT *(Maximum 200 words)*
This study compared the elements of existing contracting certification programs to an ideal contracting certification model developed by experts. The expert panel responded to an open-ended electronic interview to convey their ideas regarding the individual elements for the model. Input received from the initial interviews was used to develop a survey for the panel members. The surveys were completed and results were recorded and conveyed back to the panel members. This process was repeated until a majority was reached on each individual element of the model, resulting in the ideal certification model. The final model contained elements of both the APDP and NCMA certification programs. There were no unique characteristics identified by the panel. Following model development, stakeholder assessment surveys were utilized to gain insight from the contracting field assessing how the ideal model was perceived when compared with the existing certification programs. Stakeholder assessment of the model varied according to each individual element in the model. The impact of this study was aimed at ensuring that certified contracting professionals possess requirements commensurate with their certification level. Potential program deficiencies were identified and recommendations were made to both NCMA and senior government contracting personnel for potential program improvements.

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