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Building an Academic and Government Partnership in Workforce Education: Challenges and Possibilities

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In 2004, the College of Education at Oklahoma State University began the task of building a partnership with the Defense Ammunition Center (DAC) in McAlester, Oklahoma, and implementing research-driven, experience-based workforce education. In this article, the authors describe unique features and challenges of this multi-year University/Government collaboration which is aligned with the mission and goals of NAITTE and provide an overview of workforce education initiatives the partnership seeks to refine. This manuscript can serve as a possible model and catalyst for further discussion and research in workforce education particularly in times of dwindling resources, increased demands on time and the importance of research activities at many institutions.

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(See pg. 91 for more information about the authors.)

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The mission statement of the National Association of Industrial Technical Teacher Education (NAITTE) is to “advance and promote excellence in industrial and technical teacher education and trainer training in all settings” (<http://www.coe.uga.edu/naitte/information.htm>). The goals of NAITTE are focused on the use of research in the field which in turn has implications for teacher education and the broader field of workforce education as a whole. Members are encouraged to collaborate with related groups in the field.

Using this mission and goals as the foundation, the building of a partnership between the Defense Ammunition Center (DAC) and the College of Education at Oklahoma State University began in 2004. Those involved in the College of Education ranged from associate professors, assistant professors to graduate students in both masters and doctoral programs as research assistants. Throughout the partnership building and implementation phases, lessons have been learned which can help inform workforce educators and provide discussion points to move our profession forward.

Workforce educators, regardless of the arena in which they operate, attempt to model important principles. These principles include work-based education, experience-based learning, partnership building, continual improvement and innovation and meeting context specific demands to solve problems (Raelin, 2000). Fenwick (2001) refers to this approach as “situative perspectives... emphasize the connection between individuals and their communities of practice in a collective explanation of experiential learning” (p. vii). Whether one uses the term workforce education or career and technical education, the missions are the same: preparation of the workforce and increasing individual workers’ opportunities. In *Workforce Education: The Basics*, Gray and Herr (1998) define the term broadly as:

...that form of pedagogy that is provided by educational institutions, by private business and industry, or by government-sponsored, community-based organizations where the objective

is to increase individual opportunity in the labor market or to solve human performance problems in the workplace. (p. 4)

Partnerships are often touted as the answer to many modern day dilemmas and provide strength in numbers and the combination and multiplication of individual abilities. Business and industry have long sought partnerships with universities and universities with industry, in their efforts to strengthen workforce preparation, integrate learning and practice, benefit the economy and serve businesses and communities in concrete ways (Meister, 2003; Reid, 1994; Silka, 2004). Although these partnerships are not without controversy (Reeve & Gallacher, 2005), they have been recognized to build on individual institutional strengths for a common purpose. One without the other is lacking valuable skills. Certainly, when attempting to build a partnership with an outside group, the approach taken will influence the effectiveness of the final products. A thoughtful approach based on a shared philosophy and a shared mission that utilizes the strengths of each institution in the partnership will increase the likelihood of successful partnership rather than using a haphazard approach.

In the partnership that is the practical focus of this manuscript, workforce education is focused on the education of adults in a specific context (DAC), is aligned with the mission and goals of NAITTE, is consistent with the principles of workforce education and draws from the philosophy of progressivism. This complex movement has emphasized learning by experience, scientific inquiry, vocational training, and a broader approach to education than is commonly seen in the narrow focus of many colleges, schools and universities (Elias & Merriam, 2005). Knowles best illustrated this broader vision for adult progressive education in this quote, “embracing [the] concept of the role of the university in serving all of the people of the state in relation to the full scope of life problems – agricultural, political, social and moral” (Knowles, 1977, p. 491).

Agreement among the stakeholders about many of these principles has allowed this collaboration to blossom and grow.

Seeking to implement the mission, goals and principles mentioned above, the authors present aspects of a multi-year

University/Government partnership and the workforce education initiative it seeks to refine, and provide an overview of challenges that face this partnership. We include examples from qualitative research findings that will be used to ground improvements in workforce education at the DAC site: worker perceptions of critical competencies and mentoring necessary to fulfill job responsibilities. Our hope is for these “lessons from the field” to serve other workforce education programs, underscore the importance of context and industry mission in workforce education programs, and provide specific information about the partnership that may inform the development of University/government collaborations in other contexts.

Origins and Structure of a Unique Collaboration: DAC and its Stakeholders

In 2004, Oklahoma State University (OSU) signed a contract with *SI International*, a government contractor, that would kick off what would become a multi-year collaboration with The U.S. Army Defense Ammunition Center (DAC) in McAlester, Oklahoma. The DAC, an integral part of the United States defense community, was relocated to McAlester from Savanna, Illinois, in 1998 due to the 1995 BRAC (Base Realignment and Closure) decision. The DAC is charged with a unique and critical mission: to serve an international purpose in the ammunition industry with both government and private contracts. “Our goal is to promote and assure safe and efficient operations involving ammunition and explosives from the time it enters the stockpile inventory from manufacture through use in training, wartime, or destruction (demilitarization)” (Defense Ammunition Center, n.d.). The DAC has a culture of strong respect for academia, its research and teaching capabilities. As such, DAC managers have deliberately and continuously sought ways to collaborate with research institutions in order to solve ammunition-related issues. For the DAC’s ammunition school, this seems particularly appropriate. However, because the funds received by the DAC are not designated as research funds, it is prohibited from direct agreements for research with academic institutions. This is a

unique aspect of some University-military partnerships: An alliance between the DAC and any university requires an approved third party.

SI International, an information technology (IT) and network solutions company, serves in this key role for OSU and the DAC. *SI International* is approved for Government-wide Acquisition Contracts (GWAC) under the Millennium Lite Contract provision. This important designation for *SI International* allows them to serve as a vehicle for OSU College of Education to accept the task-ordered contract work for the DAC.

While the DAC ammunition school, through *SI International*, contracts with several divisions within the university and a number of outside non-academic contractors, OSU's College of Education is a unique player. While colleges of education have extensive experience in working with school systems, they have not traditionally been a source of extensive consulting or collaboration with entities other than higher or public education. OSU's College of Education is one of six colleges based on the Stillwater, Oklahoma, campus. OSU is a premier land-grant institution founded in 1890 and its College of Education offers programs which lead to bachelor's, master's, and doctoral degrees in areas such as k-12 teacher preparation, career and technical education, school psychology, counseling, research and evaluation, educational administration and higher education. While the college's alliance with DAC may not be a common phenomenon for colleges of education, we see the partnership as part of a "broadened view of education" fundamental to the philosophy of progressivism and an integral component of both OSU's and the college's missions to use our knowledge in service of the community, the people of the state, and indeed, broader national needs.

Other active contractors for the DAC ammunition school handle tasks loosely related to those of the college and contribute "educational methodologies" consistent with broader components of progressivism key to this unique educational initiative that cannot be implemented through traditional learning formats. These include, but are not limited to, designing and developing a knowledge management portal, upgrading and supporting a learning

management system (LMS) and a learning content management system (LCMS), creating and maintaining a knowledge management repository, and analyzing, designing, developing, and delivering web-based and blended courses. Most are corporate entities, some with strong government or military ties, but currently no other university except OSU sits at the contractors' table for the DAC ammunition school. This places the university and the college of education in a unique and complex position as we navigate working relationships not just with the DAC and *SI International* but also, to a lesser extent, as a part of a large consulting effort with many other non-academic entities.

It is safe to say that the other contractors range from being somewhat puzzled by our presence to outwardly competitive about the tasks we have been assigned. After all, as a university and especially a college of education, we are somewhat of an interloper in the competitive, "business as usual" world of government consulting. Although scholars have noted—and critiqued—contemporary changes in higher education that resemble corporate practices and philosophies (Readings, 1997) as Universities grapple with budget cuts and privatization trends, the primary mission of colleges of education remains fundamentally different from corporate goals: to prepare future educators and to contribute to an educated citizenry. As scholars have found in other research settings (Reeve & Gallacher, 2005), partnerships necessitate a range of negotiations given the variety of workers' professional backgrounds and sometimes divergent priorities across business and academia. The success of the partnership depends to a large degree of negotiating differing organizational cultures while maintaining the strengths of the stakeholders.

Contextual Challenges: The Need for the Partnership

Because of generational issues in the United States, the military and other organizations are beginning to experience some unique workforce challenges such as ever increasing workplace demands, rapid changes in a global technological society and an aging workforce (Parks & Moreton, 1999). One of the most significant

factors is the implications of massive retirements that are projected to remove a great deal of experience and expertise from organizations in a short amount of time. With a substantial amount of intellectual capital, critical “know how” and overall experience projected to depart the DAC over the next few years, new pressures have surfaced for younger generations of workers who must quickly prepare to fill the void. Given the specific services DAC provides to the military community, this pressure is intensified by increased military activity worldwide.

As a result, the current focus (2006-2007) of the partnership is on the DAC’s Quality Assurance Specialist, Ammunition Surveillance (QASAS) program, an established Department of the Army intern program that prepares civilian personnel to monitor and inspect the production, transfer, and storage of munitions for all U.S. military branches around the world. The pace at which older workers are exiting from their QASAS positions has led to a serious compression of the time allotted for QASAS careerists to develop knowledge and skill levels appropriate to actual demands in the field. This time compression has been widely noted in other fields as businesses employ a range of new strategies to prepare flexible workers to produce goods and services on-demand (Gibson-Graham; 1996). Historically, QASAS personnel spent from seven to nine years preparing via classroom training, on-the-job training (OJT), and then as journeymen. In sharp contrast, current QASAS interns are exiting a 24-month preparation process, comprised of classroom training and OJT, and experiencing immediate deployment to various theatres around the world, including hot spots like Afghanistan and Iraq.

Anecdotal reports, as well as some organized efforts with the DAC, have indicated some disconnect between the current QASAS preparation process and actual job competencies required in the field. This sense of disconnect has led to serious concerns about the true level of preparedness of QASAS interns. With pressure to train QASAS interns faster and more adeptly to meet increased demand and decreased timelines, the DAC requested assistance in addressing the current preparation process. Discussions led to an interwoven set of three major research-based education initiatives that will, over

time, achieve a full evaluation and redesign of QASAS preparation efforts.

The Initiatives Implemented to Meet the Challenge

The three primary tasks of the college of education in this stage of the partnership, designed collaboratively with the DAC in order to meet the challenges inherent to producing skilled ammunition workers amidst demographic shifts and external pressures are 1) the Evaluation and Alignment of the Formal Training Process; 2) DAC Instructor Preparation and Certification, and 3) Evaluation and Alignment of the Mentoring of Interns. These three tasks are consistent with the mission, goals and principles of workforce education. In this section, each of the three tasks and the Competency-Based Educational Model upon which the tasks are based will be described. We weave findings from extensive qualitative research conducted with ninety-six (96) QASAS personnel that guide our implementation of these three tasks.

Task 1—Evaluation and Alignment of the Formal Preparation Process.

The core of any successful workforce-training program using the competency based approach must be focused on the actual position requirements for which the individual is being prepared (Blank, 1982). Many have viewed Competency-Based Education (CBE) as a key resource for the field of workforce education (Finch & Crunkilton, 1999). A CBE approach is a systematic approach to training with each component of the training designed, monitored, and adjusted with one end purpose, meaningful results to the worker and employer.

Organizational environments rarely provide the time or resources for any learning that is not directly related to the knowledge, skills, and abilities needed to meet immediate job demands, and the military is certainly no exception. If these components are not carefully and accurately defined, as well as monitored on an ongoing basis, all related preparation efforts will be skewed and critical resources wasted. With these key contextual elements in mind, the research

team utilized the operational framework of CBE to provide theoretical guidance for these three initiatives.

Wiggins and McTighe (1998) refer to a ‘backward curriculum design’ to implement CBE. With the model, three stages occur. The first stage is to draw from research conducted in the DAC context to identify desired results, and to modify an existing set of 119 competencies determined as crucial to performing as a QASAS. This number of learning objectives may be daunting to many; however, DAC administration considers these key competencies with which the QASAS employee must become familiar to handle munitions and supplies properly and safely. To evaluate these competencies, data were collected at four military installations in various parts of the United States to determine which skills and competencies QASAS personnel believed were imperative to performing their roles. Using a semi-structured interview format, a team of researchers conducted 96 interviews with QASAS interns, instructors, surveillance chiefs and wage grade supervisors designed to elicit perceptions of the existing training program, the institutional climate, critical competencies, and mentoring practices. DAC personnel indicated that an array of skills—beyond the 119 critical competencies identified by the DAC—were key for performing their roles. While some respondents referred to competencies present in the existing list, more often QASAS interns and careerists indicated such skills as “problem solving,” “negotiating people,” and “research, reference, and regulations” as imperative to performing their jobs. While these skills may be useful to any number of work roles, the urgency with which some DAC personnel described the need for these skills indicates their perceived importance to performing well the unique role of the DAC careerist: ensuring safe oversight, transport, and delivery of explosives and ammunition in a time of intensified international conflict.

These research findings point to gaps in current training that will be addressed in future initiatives. Wiggins and McTighe’s (1998) model emphasizes that “learning that should endure over the long term” (p. 45). The desired results must be realized in the short term but must also lay a foundation that will endure and support continuing development throughout the career of the QASAS.

Refining the existing workforce education program with greater attention to what QASAS careerists see as key competencies will be undertaken with this long-term vision in mind.

The second stage is to determine how student learning will be measured and the acceptable evidence of competence. Electronic follow up will be implemented as needed in order to determine the merit, criticality, and frequency of each of the competencies as well as the length of time that elapses between the formal preparation process and the actual need to practice each competency. Additional work will be completed to determine how and to what level a QASAS intern must be able to perform the competencies. This rated list of competencies, and the additional elements named by QASAS careerists, will then provide the benchmark to which all classrooms and site-based preparation efforts will be compared in future stages of the partnership.

The third stage in a backward curriculum design model is to plan learning experiences and instruction. Decisions in this stage must be carried out in close concert with course developers and management at the DAC. As previously noted, specific contextual issues must be addressed for an educational initiative to be effective such as the decreased amount of time for interns to be fully competent as well as the loss of knowledge based on attrition and retirement. Because of the pace of change in the field, training in all types of organizations can often be obsolete as soon as it is developed. This requires that a feedback mechanism be developed that provides ongoing information about changing job competencies and the impact on existing formal preparation efforts. Determining the most appropriate delivery vehicle for training must be part of the equation. Current conditions require that the delivery methods used require the fewest resources for meeting the specific needs in that context.

Currently the 24-month intern experience is broken equally into classroom/online training and OJT time. Although contemporary workforce education initiatives often promote technological use in corporations/industry and match training efforts accordingly, the specific skill-set needed for the QASAS intern may necessitate heavier use of other training methods. Key to development, then, was for OSU researchers to use research-based findings to help determine

whether the most efficient and effective training delivery vehicle was classroom training, online, OJT, a combination of these, or other curricular avenues. The overwhelming response from interviewees was desire for training to better reflect “authentic” tasks performed in real-time and real settings central to the QASAS role. While some respondents viewed online and classroom training in positive terms, far more pressing was the need to incorporate role-playing, simulation, and apprenticeship into their job training to maximize the usefulness of training time and off-set the increased time compression in which QASAS interns are expected to learn their roles.

This information has guided us to redesign the preparation process into one that is deliberate and finely tuned to the tasks the QASAS must accomplish. The goals are simple, although in practice quite complex: Each piece of the QASAS preparation process must be tightly linked to the need for the related competency in the field. With preparation times compressed as they are and the importance of the QASAS careerists to safety of people worldwide, there is no time to be wasted on non-critical items. Once again, drawing from the CBE model, the partnership has implemented workshops on critical thinking, mentoring and adult education theory.

Task 2—DAC Instructor Preparation and Certification.

Another competency-based concern resided with the instructional developers and training directorate instructors who are the hearts and souls of the QASAS preparation process, as well as behind all other munitions-related training worldwide. As with many corporate environments, the DAC course developers and instructors are often subject-matter experts in munitions but without sufficient teaching skills for effective transfer of their knowledge. Drawing from backward curriculum design (Wiggins & McTighe, 1998) the goal was to develop, in collaboration with the DAC personnel, a new training design to streamline the process and create a sequence of learning opportunities that continuously advance the desired knowledge and skills. Although an existing DAC instructor certification process was in place before the DAC-OSU partnership was established, DAC representatives reported that most instructors

were given permission to continue teaching without the “required” certification because of difficulty with scheduling the training or general resistance to the process. Moreover, when the three independent phases were completed, they were often out of order. To address these issues, we broke the existing DAC instructor certification process into three phases of training designed to provide “a foundation for subject matter experts to develop the required competencies, and opportunities to learn the strategies and methodologies required creating a powerful and beneficial learning environment and/or product” (DAC-AS Memorandum 351-01, p. 2).

Part of this training is being delivered via one of three military-based options, another part was piloted via professional development workshops at OSU, and the final aspect of this training will be to implement a self-standing process specific to the use of technology in teaching. This task established the OSU College of Education as the “one-stop shop” training source for DAC instructor certification, a practical delivery effort that will pilot in the next contract year. Although this model shares elements of other partnerships such as reliance on theories of adult education and CBE and a mission to serve the larger community, the urgency of the DAC mission does not allow for a sluggish outdated education and training system. Key to our efforts is an integrated feedback loop, longitudinal relationships between stakeholders to ensure continuity and completion of objectives and the immediate implementation of skills acquired during training. The feedback—directly from QASAS interns participating in the training—may spur ongoing change in both content and delivery modes for training. In this way, the DAC instructors will be afforded the opportunity to gain higher levels of knowledge and skills in a shorter and more carefully targeted process, rather than in detached and somewhat disconnected parts.

Task 3—Evaluation and Alignment of the Mentoring of Interns.

One of the more fascinating discoveries by the College of Education DAC team was that, in addition to the formal QASAS preparation program, interns are also assigned to a mentor. However, unlike some workplace mentoring programs, the role was largely undefined, and no training or defined expectations were available.

The existence of such a program indicates recognition that a successful QASAS careerist must be more than the sum of concrete skills and abilities. Success also depends upon an individual's unique abilities to understand the organizational environment, navigate the political undercurrents, interface with multiple personalities and personal agendas, work individually or as a part of a group, and make subjective judgments based upon often incomplete or unclear information. It is the intern's mentor that is in a unique position to assist with the targeted development of this larger, more nuanced set of individual perceptions and interpersonal abilities--perceptions and abilities that go beyond key job competencies and are critical in the overall career success of these individuals.

Data collection efforts thus commenced to address key questions related to mentoring: 1) How did interns perceive the role of mentoring *in this environment*? 2) What major tasks/duties should be a part of the mentor role to best prepare interns for success *in this environment*? 2) How should mentors and interns be matched? 3) How will the expectations of the mentoring relationships be communicated to both mentors and interns? 4) What formal training will be provided to mentors? and 5) How will the process be updated to best meet change organizational and intern needs?

Findings from interviews with the DAC personnel both confirm the important role mentoring can play in workforce, educational, and military settings (Baker et al, 2003; Sullivan, 1993) and emphasize its importance specifically within the DAC context. Indeed, a primary finding was the perception that mentorship is an underutilized resource in the DAC learning environment that, if refined and better utilized, could facilitate the development of critical competencies respondents express as imperative for success in their professional roles. Mentors are well-positioned to work individually and in small groups to address challenges particular to the DAC environment and negotiate the differing needs, experience levels, and backgrounds interns bring to their training. Consequently, mentors not only have potential to facilitate the development of individual careerists but to influence positively the very organizational climate of DAC in which the stakes of learning are high and demands to produce skilled workers have steadily increased.

Findings also indicated the importance of 1) viewing mentorship as a two-way street in which interns take responsibility for asking questions and acknowledging the varied expertise of mentors/instructors; 2) mentors' demonstrated investment in their mentoring role signaled by their availability, positive attitude and responsiveness; 3) a blend of informal practices and formal mentoring programs to provide personal and professional support; 4) acknowledging the intern as a professional-in-the-making and affirming the strengths and characteristics that made them candidates for the internship program in the first place; and 5) refining such logistical aspects of formal mentoring programs as timing of meetings, frequency of meetings, and mentor/intern ratio to best suit the DAC mission and context.

These research findings and Competency-Based Education provided the framework to guide our efforts. We are currently designing a context-specific mentoring process and structure specific to the demands of the DAC environment. Subsequent mentor training will stress the importance of providing training for this key role to better utilize it in the DAC setting and to better customize mentoring goals to the DAC program. As with the other tasks, a critical piece is the design of a feedback loop from mentors, interns, and other DAC personnel that seeks to provide an ongoing barometer of success and identifies needed modification of the process.

Unique Challenges – Unique Solutions

The collaborative partnership between OSU's College of Education and the training directorate of the Defense Ammunition Center is constantly evolving and perhaps can give other workforce educators guidance as they form and implement partnerships in our field. Some team members equate the experience to rafting a river--periods of calm and steady progress interrupted by unforeseen rapids and rapid regrouping efforts by the team. In essence probably the best advice we give to newcomers to the college's team is to simply "find a place to strap down tightly and try to enjoy the scenery along the way." Some of the specific challenges we have faced (and, in some instances, continue to face) follow.

Cross-Cultural Relationships.

Initial conversations with our DAC-designated points of contact showed us that employees were wary of our presence if not resentful of the imposition of outsiders on their world--perhaps most especially so-called "ivory tower" academics. In general, these employees work for the DAC managers who initiated our collaborative partnership and they remain somewhat suspicious of our intent, abilities, and understanding of the work they perform. In addition, they, like us, exist within what is primarily a traditional bureaucratic organizational structure. We believed these issues were best negotiated in two primary ways: (1) deliberately and strategically building close relationships with our points of contact within the DAC, and (2) freely sharing information about our goals and tasks.

The building and maintenance of one-to-one relationships with key employees of the DAC is an ongoing mission of the team, and "success" can sometimes feel a bit elusive if not impossible to define. With all this in mind, we have established a team guideline that requires contact between our task coordinators and the DAC points-of-contact (key employees) a minimum of every 30 days. Interaction between our team leader and the leader of the DAC training directorate occurs, on a practical level, on almost a daily basis. In addition, and prior to the start of data collection that took us into military installations, all stakeholders were given access to an online overview of the tasks to be completed as well as basic information about key issues. Information was posted to the DAC's online learning system and will be continuously updated throughout the life of this effort. We are constantly in search of more and better ways to connect across cultures with the people who are critical to the success of our collaborative effort.

The Generally Independent Nature of Faculty.

In order to provide accountability and efficiency, team members are given primary responsibilities for tasks within our team's mission. However, because our tasks are so tightly interrelated, success requires that work be completed in an integrated style of

sharing across tasks—constantly looking for links across tasks, using common frameworks to guide our efforts, and assuring easy access to all information. The typical working practices of research-university faculty do not, in general, typically align well with this type of open process.

The DAC team meets every other week and detailed task reports are shared, collaborative problem solving occurs, and identification of needed resources or problem solving is discussed. During team meetings, members are reminded frequently that we are all working collaboratively and what is discovered in one task may have implications for other task(s). All members have access to a protected, shared network drive in order to make electronic information easily accessible. There is no doubt that our experiences with this project are adding to our abilities to enhance the leadership learning experiences of our own students. That after all, is the mission of workforce education; preparing the workforce of tomorrow.

The University Culture, Fluidity and Response Times.

The challenges to universities, particularly large research universities, are complex. The environments, values and working modes of faculty are not necessarily aligned well with the unique demands of corporations or government entities (Reeve & Gallacher, 2005). Likewise, the established bureaucratic model, present at most universities, can be a major hurdle for meeting the rapidly evolving demands of an outside entity, particularly one working in a wartime environment/mode. Even within the university itself, certain colleges or entities are better equipped than others to navigate the corporate or government world. While the three tasks that have been previously outlined do comprise the major efforts of our team, we continuously work with the DAC to meet their evolving needs.

For example, within just the first six months of the current contract year, a number of “additional” tasks, beyond the scope of our original charge, were handled by our team. These tasks might fall outside of traditional workforce education initiatives, but they are in line with the demands of the DAC mission and context. These ranged from smaller tasks, such as a review and recommendation of

a private vendor's proposal to move two DAC-based munitions training programs to full online delivery, to larger tasks such as assistance with a unique set of quantitative data analysis tasks and the provision of facilitation services for a munitions conference that brought a large number of top U.S. Army field commanders to our campus. The conference addressed the larger task of helping to solve the problem of how to collect the expertise and knowledge of rapidly exiting employees, an issue again related to the massive retirements that are affecting all parts of the U.S. military.

Large or small, these evolving needs place unique stress on the sometimes rigid university and regulatory systems and processes within which we work. Layers of bureaucracy, complicated financial streams subject to outside audits, and documentation requirements complicate almost every move we make. The collaboration with other related groups in the field (one of the goals of NAITTE) becomes very challenging as we expend additional effort to explain and justify many of the requests that, in order to meet them, require that we press the boundaries of what colleges and universities have traditionally done. In addition, these new challenges stretch our own creative problem solving strategies along with those of the academic administrators and other academically based professionals on whom we depend. We work to explain our mission, our successes and our challenges with key people within the broader university. As we do with key contacts at the DAC, we seek to build personal relationships within our own bureaucracy that allow us respond more quickly to unusual requests or short timelines for which the university environment is not ideally designed.

“Staffing” our own Team.

Every workforce education partnership relies on team members who are committed to success. We are sometimes challenged to find willing and available people to be a part of the college's DAC team. The team is dependent upon strong research assistants who welcome, in addition to the demands of their own graduate work, the additional pace and demanding load that can be an expectation of participation on this team. In addition, the evolving demands of the DAC project do not necessarily coincide with the academic calendar and, while a

knowledgeable faculty member may be within the college, he or she may simply not be available to us within the timeline needed.

The movement toward partnering is being recognized by various sources who have noted that “academia, traditionally supposed to exist apart from industry, is increasingly involved with industry, not only through consulting and contract research but in forming companies from academic research” (Etzkowitz, Gulbrandsen, & Levitt, 2001, p. 4). Leydesdorff and Etzkowitz (2001) also report that, “in the United States, university, industry, and government are becoming less isolated from each other” (p. 3). Times are definitely changing.

A Reorientation to the “Big Picture”

As with all intense relationships, it can be easy to get lost in the project and forget the reality of what and whom we are influencing. Our efforts with the DAC are not, after all, a typical research project or even typical efforts at workforce education. Every day we see the reports of events in far away places like Iraq and Afghanistan and we are conscious of the fact that we are participating in an educational initiative that has the potential to influence the safety and security of the munitions used for our soldiers around the world. On our DAC team, we have individuals with family currently serving in the armed forces, and that brings a personal perspective to what we do.

Collaborations such as this one are consistent with the changes in the broader field of workforce education. Contemporary educational initiatives must be fluid and visionary to meet the needs of a rapidly changing workforce, global demands and increased time compression and the need to maximize scarce resources. This initiative aligns with the goals of NAITTE in multiple ways; research based initiatives promoting context specific relevant workforce education, and using knowledge to inform graduate education and teacher training. We hope that describing this partnership will be helpful to others and be a catalyst for more discussion about the future of workforce education. The collaboration of higher education, business principals and the DAC may be a challenging

and evolving partnership; however, we embrace our role as a fundamental obligation.

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