
Executive Summary

Introduction

In March 2009, Baltimore City Community College (BCCC), Community College of Baltimore County (CCBC), Cecil College (CC), and Harford Community College (HCC) awarded a contract to Beacon Associates, Inc. to identify the educational needs of the Aberdeen Proving Ground (APG) workforce. Significant changes in the APG workforce were on the horizon due to the impending moves associated with the Base Realignment and Closure (BRAC) law enacted by Congress in 2005.

Objectives

1. Identify the learning needs of workers in four specific areas associated with BRAC as it pertains to the realignment of APG.
 - Engineering and engineering technology
 - Mathematicians and scientists
 - Technology:-Software engineering, software applications, network security, and information assurance
 - Business administration, logistics, procurement, and project management
2. Determine what gaps exist in the combined current curricula of the four colleges to support the educational needs of the APG workforce.
3. Develop three courses for the use of the colleges and facilitate transfer and articulation agreements.
4. Facilitate planning to strengthen the educational capacity to meet the needs identified by the study.

Data

We obtained four types of data: demographic data on the workforce projected to be at APG in 2012, training data on that population for 2008, training forecast data for that population, and curriculum data from each of the four colleges (credit, certificate, and non-credit). The employee databases include all positions which will be located at APG in the year 2012. This includes all positions which are currently at APG and all positions at other locations such as Fort Monmouth and Fort Belvoir.

Occupational Groups

A total of 221 occupations are found among the 11,313 government employees. We organized those 221 occupations into 13 related occupational groups as defined by the Office of Personnel Management (OPM) which have shared common elements.

For each occupational group, we performed an analysis to determine the requirements for the occupation (or occupational profile), the distribution of occupations within each occupational group, the education of the incumbents in each group, and the potential retirements for each occupation within the next five years.

Education and Training Needs

Training forecast data was obtained for three education and training areas. These three areas are:

1. Education / Skillset: Formal job specific training or education which provides a theoretical grounding in a subject – usually at the college level.
2. Functional / Domain: Job specific education or training which focuses on practical application of theory.
3. Leadership: Training which either provides development in leadership skills or which provides leader development specific to a technical area, personal improvement, conferences and similar educational activities.

The APG workforce is highly educated with over 56% of all employees holding a degree of some type and with over 2,000 employees holding a graduate degree. In many occupations, an undergraduate degree is an entry level requirement. Many agencies immediately enroll a new employee in a master's program upon hiring. This focus on education would provide a steady stream of potential students by itself. But, due to some special factors, we can expect a dramatic increase in demand for the next 3 – 5 years since many of the current workforce are eligible to retire within the next five years and only 50% or less are expected to move to APG from their current assignment.

Defense Acquisition University (DAU) provides hundreds of courses in logistics, procurement, and a number of other related areas, but for the purpose of this study, we only focused on the 25 classroom courses that APG requires for its current employees.

The acquisition/ procurement career field has three levels of certification that can be met through DAU. It is important to note that DAU is not the exclusive provider of this coursework. It is possible for other institutions to develop similar programs and become accredited by DAU or FAI.

In the area of leadership development, there are a number of programs, but the three that may offer some opportunity for the colleges are:

1. Basic
2. Intermediate
3. Advanced

Each of these programs consists of on-line coursework followed by a resident classroom experience. For the Basic program, there is a two-week residency; for the Intermediate program, it is three weeks; and for the Advanced program, the residency is four weeks. As with the DAU courses, there are some limited opportunities for colleges to provide some of this education. The Office of Personnel Management (OPM) generally manages most of the leadership competencies and training requirements. Currently, they use a contracting vehicle that allows a large number of vendors to win work in this area. It is not something that would easily fit college credit courses, and non-credit course programs may find it too requirement driven to bother to develop and stay current with the OPM and Agency requirements.

2008 Educational Demand

In 2008, APG employees took over 20,000 classes and spent over 100,000 hours in the classroom. Not surprisingly, the preponderance of education and training focused on the functional (or technical) area. In terms of total classes taken (in this data a class ranges from one hour to several months), the college-level education is a tiny fraction compared to the functional and leadership training requirements. But, when we examine the same data from the perspective of classroom hours (time actually spent in a classroom), college-level education becomes a larger share of the pie. This stands to reason, since college-level programs usually involve 45 classroom hours per course, while functional and leadership training take far less classroom time.

Training Forecast

We were able to forecast data for 84% of the population. A key assumption for this forecast was that this segment of the population was representative of the entire population and thus extrapolated the forecast data for the entire population by multiplying the data by a factor of 1.19. It should be noted from this data that there is a sharp increase in demand for degrees, particularly at the bachelor's and master's levels, for the first three years (2010 – 2012) which gradually reduces and levels off around year 2016. Only the demand for doctoral degrees remains constant over the next ten years.

Curriculum Assessment

To assess the colleges' capacity, we catalogued the course offerings for all four colleges. Furthermore, in order to get a clear idea of how the college offerings linked with the workforce needs, we created a set of matrices that match each college's curriculum offerings against the occupational groupings that we identified in the workforce analysis. We created three separate matrices; one for credit (degree-producing) offerings, one for certificate programs, and one for non-credit courses / programs. This resulted in a massive spreadsheet which we then analyzed by each occupational group to determine which colleges had programs and/or courses to support that occupational group.

From this analysis, we then converted the spreadsheet into a "dashboard" which clearly illustrates: 1) which occupational groups the colleges had programs in place to support (credit, certificate, and non-credit), 2) where there were possible gaps, and 3) where it appeared that no programs existed. We also noted where a program was in development.

Curriculum Development

Our first step in curriculum development was to seek stakeholder feedback. On August 27, 2009, we held a Roundtable for external stakeholders. Each college president invited representatives from state and local government, APG, the contractor community, and selected college faculty members. From the Roundtable discussion, we were able to develop a "SWOT" analysis (Strengths, Weaknesses, Opportunities, and Threats) to be used for strategic planning by each of the colleges. On September 15, 2009, we held a second Roundtable for faculty and staff of the four colleges. This Roundtable resulted in a set of prioritized recommendations for the development of new credit, certificate, and non-credit offerings.

Following the Roundtable, the Steering Team met with Beacon Associates several times over the next few weeks and determined that Beacon would develop these three Human Resources (HR) credit courses:

- Managing the HR Function
- Employee Training and Development
- Employment Law for HR Practice