It is generally agreed that the federal government's inability to attract and retain a competent work force represents a personnel crisis. Moreover, it is argued that there is serious erosion in the quality of the human capital base in the United States civil service (Levine, 1986; Levine and Kleeman, 1986; Report of the National Commission on the Public Service, 1989). This situation may worsen as a result of demographic trends that suggest a future labor market scarcity of skilled workers (Office of Technology Assessment, 1988). The buyer's market for labor is coming to an end. The labor pool is shrinking and the majority of individuals entering the work force will be women, minorities, and immigrants. Such workers are seen as possessing skill deficiencies at a time when knowledge requirements are increasing (U.S. Department of Labor, 1989). These facts are worrisome to federal officials because government work has always been knowledge-intensive and is expected to become more so in the future.

The mix of occupations in the federal service are of the type that trend toward higher skill requirements. According to the Hudson Institute (1988), federal workers are twice as likely to hold professional, technical, and managerial jobs than private sector employees. Thirty-one percent of all non-postal employees possess at least a bachelor's degree, up from approximately 25 percent in 1976 (U.S. Office of Technology Assessment, 1988). It is anticipated that work in the national government will continue to evolve along these lines requiring greater amounts of comparably skilled persons to fill its ranks (McGregor, 1988).

Solutions to the shortage of employees are seen as dependent upon success in attracting able employees and sustaining competency levels among those already at work. Stated differently, both "buy" (recruitment of new workers) and "make" (development of the present work force) strategies are conceived as necessary. In terms of recruitment, the ability of the federal service to attract a "fair share" of college graduates receives considerable attention.
While such a design is certainly appropriate, it raises a number of critical human resources issues.

This article explores whether the recruitment of non-college labor is receiving sufficient attention in the strategy to revitalize the public service. It raises concerns about the impact of degree requirements on achieving a representative bureaucracy, and it introduces an alternative method for qualifying candidates for federal employment.

Present Approaches and Missing Links

The recruitment of college students receives a great deal of attention (e.g., U.S. Merit Systems Protection Board, 1988). Perhaps nowhere is the importance of college recruitment better expressed than in the Report of the National Commission on the Public Service (1989), headed by former Federal Reserve Board Chairman Paul Volcker. A sampling of the recommendations of its Task Force on Education and Training underscores this interest (Figure 1).

As indicated, the major thrust of the Report deals with the role of universities and their graduates in satisfying the human resources needs of the national government. Although this is an important issue, a broader view of the potential federal work force is needed.

It is reasonable to conclude that substantial numbers of workers without college degrees will continue to be employed in the federal service well into the next century. Many of these are "down-the-line" employees whose importance in public production systems should not be underestimated. Future trends suggest significant growth among occupations that require some post-secondary training, but not necessarily college degrees (Silvestri and Lukasiewicz, 1989). These jobs are technical and can be filled by individuals with post-secondary training ranging from 6 months to 2 years (Kutscher, 1989). More than half of the nation's jobs expected to be created by the end of the decade will require some education past high school but only a third will demand a college degree (Johnston and Packer, 1987).

There is even some evidence of a growing oversupply of college graduates. One study projects that the availability of such graduates will exceed the number of jobs requiring a college education by about 100,000 per year, or by 1.5 million over the next decade and a half (Sargent, 1988). Another study found that approximately 26 percent of college graduates during the 1983-1984 period worked in occupations that did not generally require a degree for entry. In fact, only 59 percent of these graduates felt that a degree was required for their jobs (Braddock and Hecker, 1988). According to Kutscher (1989), Bureau of Labor Statistics data also suggest an easing of the competition for jobs that have characterized the job market for college graduates for the past 20 years. Of course, these data can mask shortages in specific occu-
Figure 1

Selected Recommendations of the Task Force On Education and Training

Recommendation 3: Government agencies must increase their visibility on college and university campuses.

Recommendation 5: Congress should adopt some form of program modelled on the experience of the Federal Reserve Officer Training Corps to subsidize the college education of a stipulated number of outstanding students in return for federal service.

Recommendation 6: Universities must give greater visibility to the opportunities for government service.

Recommendation 7: Colleges should seek to offer more breadth to undergraduates in specialized majors who plan careers of government service.

Recommendation 8: Federal agencies should actively recruit and hire graduates from professional schools of public policy and public administration as a source of exclusive talent.

Recommendation 10: Federal agencies should modify their training policies to utilize the potential contributions of the educational community.

Recommendation 11: Schools and faculties of public affairs must respond by vigorous efforts to build effective mid-career programs.

Recommendation 12: University presidents, chancellors, and deans must make a commitment to improving public service.

Source: Leadership for America: Rebuilding the Public Service, Task Force Reports to the National Commission on the Public Service, Washington, DC: Task Force on Education and Training.

pational areas and may also signal that the valuable skills of college graduates are under-utilized by employers. Nonetheless, the fact remains that not all occupations require college graduates. The government’s strategic response to the coming labor shortage must, as a result, be more wide-ranging because workers will be needed across a broad spectrum of academic fields over the 1990-2000 period.

In addition to the challenge of finding adequate numbers of college graduates, the federal service will also have to compete vigorously for able blue collar, clerical, and low tech employees. The recruitment problem for the federal government is to attract skilled entry-level employees throughout the bureaucracy. Competence is as necessary at the base of the pyramid as it is higher up. In addition to knowing how to learn, all workers need such basic skills as (1) reading, writing, and computation, (2) listening and oral communication, (3) creative thinking and problem-solving, (4) personnel management, and (5) group and organizational effectiveness (Carnevale, Gainer, and Meltzer, 1988). As the business sector has learned, these proficiencies are in short supply and substantial investments must be made to assure their availability (Eurich, 1985; U.S. Department of Labor, 1989). This is because nearly one-third of all students in elementary and secondary education can be considered “at risk” (Levin, 1986). Such students are concentrated among
minorities, single-parent families, and immigrants, the major source of human resource capital needed for the future. This means that the number of workers who are available, even for lower level jobs, may lack the skills necessary to succeed at work. As a result, the government can neither assume a plentiful supply of labor nor expend a disproportionate share of its recruitment energy on filling positions which require college-educated workers.

America’s education system has always been biased in favor of academic preparation for college-bound students. At the postsecondary level, the nation’s “learning enterprise” has been relatively weak in assisting noncollege youth. Institutions which prepare these individuals for entry into the work force include vocational schools, junior colleges, trade and business schools, unions, the military, and employer-sponsored training programs (Carnevale and Gainer, 1989; Johnston, 1989; Carnevale, Gainer, and Villet, 1990). This “system” plays an important role in increasing employment opportunities for those who do not attend college or who fail to complete high school, i.e., the “forgotten half” in American education (William T. Grant Commission, 1988). It is this “other” system upon which the federal government, like all employers, must depend to fill a substantial portion of its future ranks.

College programs lasting four years or more account for job-qualifying training for approximately 17 million of all American workers (a significant proportion of this group are elementary and secondary school teachers). However, it is important to recognize the contributions of other types of learning institutions. For example, junior colleges and technical institutes educate 5 million trained workers; high school vocational programs, 5 million; private post-high school vocational programs; 2 million; and public post-high school vocational programs, 1.5 million. In addition, the Armed Forces have trained millions of Americans (Carey, 1985). In a tight labor market, the potential contribution of each of these elements needs attention in the government’s recruitment scheme.

It is not intended here to underestimate the importance of the goal of establishing stronger bonds with four-year colleges and universities. Nor does the study attempt to establish the value of one kind of labor against another. The aim of this study is rather to contend that those who are constructing the federal government’s program to recruit qualified human capital need to devote more attention to the problems associated with recruiting those who are not (nor need to be) college graduates. Failure to do so is a deterrent to the development of a complete, effective human resources recruitment program.

College Requirements and Representative Bureaucracy

Even when the college degree requirement is indeed a bona fide occupational qualification (BFOQ), it can have an inverse relationship to the utilization of minorities in government because people of color are under represent-
Recent studies indicate that higher percentages of white high school graduates entered college while the college-going rates of African Americans and Hispanic high school graduates remained low. The number of African Americans enrolled in college declined from a high of 53 percent in 1976 to just 36 percent in 1988. Corresponding rates for Hispanics declined from 53 to 46 percent during the same period (Carter and Wilson, 1989). Cayer and Lee (1987) report an increase in enrollment and graduation of African American and Hispanic students in college public administration programs. However, they also indicate limitations on these findings when compared to general population data and projected enrollments. They conclude that aggressive recruitment and retention efforts are still needed on college campuses if minority students are to be adequately represented in higher-level positions in the public sector.

Several factors may explain why certain minority students enroll less and have lower rates of completion in higher education. For example, African Americans are seen as experiencing “culture shock” when entering the mostly white-dominated world of higher education. Moreover, there is the increasingly serious problem of overt racism on campus with minority students facing racial epithets, jokes, and sometimes, direct physical attacks (Feagin, 1989). Additional explanations are shifts in the economic status of African Americans relative to other groups and the changing structure of financial aid (Davis and Johns, 1987; National Research Council, 1989).

Increased dependence on college degrees, then, can lead to a work force that is not representative of the population at large professional, technical, and managerial. Degree requirements can create barriers for those already disadvantaged by the existing education system. An important part of the government’s recruitment strategy must include efforts to improve the enrollment and graduation rates of minority students. These should include increased support for financial aid and enhanced funding of scholarships and fellowships for postgraduate and professional education. Four-year colleges and universities must continue their efforts at improving the proportion of minority faculty, involving minority students in campus life, increasing the degree of articulation between two-year and four-year institutions, graduating students in addition to simply enrolling them, and other activities (Pruitt, 1987; Levine and Associates, 1989; Carter and Wilson, 1989; Feagin, 1989).

**Improving Access and Upward Mobility Through Apprenticeship**

There is a need for alternative methods to supplement, rather than replace, present efforts by government and education to qualify individuals for appointment and promotion in public employment systems. One possibility is the expansion of apprenticeship programs, which combine structured on-the-job training with related instruction, in a greater number of occupations in both the public and private sectors. This approach, which recognizes the
interdependence of hands-on experience and theoretical knowledge (U.S. Department of Labor, 1988) contains a number of positive features: (1) “Work-based learning” (Van Erden, 1989) addresses the problem of the relevance of instruction to workplace demands; (2) it permits learners to experience the work “from the inside out” (Hummel, 1990); (3) it enables students to earn while they learn by coordinating employment, education, and training program; (4) it necessitates linkages with all of the components of America’s education system; (5) apprenticeship is “competency-based,” with advancement and completion tied to the achievement of specific milestones. Extending the best practices of apprenticeship to a wider range of occupations may improve access to jobs as well as facilitate upward mobility for those already in service. As such, it warrants serious consideration as an alternative method for acquiring and upskilling human capital (e.g. U.S. Department of Labor, 1988, 1989a, 1989b).

Conclusion

The federal service is facing an unprecedented challenge in recruiting capable employees because of an emerging market scarcity of labor. Like the business sector, government has begun to address this problem. So far, the goal of recruiting college graduates seems to dominate policy discussion. While this is certainly an integral part of any design, two major problems emerge.

First, while it is true that government work will become more knowledge-intensive and will continue to employ a disproportionate number of well-educated workers, there is evidence that a majority of these jobs will not necessarily require a college degree. There will be a persistent demand for labor produced by vocational schools, junior colleges, the military, and various business and trade schools. In addition to establishing linkages with four-year colleges and universities, the federal establishment must also reach out to these other educational institutions. Moreover, it cannot assume that a sufficient number of skilled lower level workers will be available. There are numerous questions associated with recruiting capable blue collar, administrative support, and lower level technical workers. These require much greater attention than they have received to date.

Second, where a college degree is a bona fide occupational qualification (BFOQ), it needs to be recognized that this requirement can create a barrier to the attainment of representative bureaucracy at the higher levels of the federal service. People of color are presently under-represented on campuses and more needs to be done to improve their college-going and completion rates. A strict demand for degrees can limit access for those seeking to enter government service and limit the upward mobility of those already working. As a result, the validity of the college degree requirement may become one of the major affirmative action issues of the 1990’s. For example, clerical work-
ers at Wright-Patterson AFB Contracting Center have filed suit challenging the new emphasis on college degrees for certain procurement positions. They contend that only a fourth of the women, who make up 74 percent of the work force at the Center, have degrees. They believe they are being unfairly barred from promotions (Rafshoon, 1990). Similar actions can be expected from those who are likewise disadvantaged.

One solution to these problems is to experiment with alternative methods for qualifying labor for federal work. A promising idea is the extension of apprenticeship to a greater range of occupations within the federal service. More research is needed to determine how expansion of the apprenticeship learning model might help address specific skill needs of the public service and reduce the possibility of a federal bureaucracy that is “two-tier” and not representative (Ingraham and Rosenbloom, 1990).

Finally, the coming labor shortage presents the government with as much opportunity as threat. Demography is not destiny (Fosler, 1988). The prospect for a quality federal work force depends upon how government leaders choose to confront the coming labor shortage. During the recent past, the rationale for making investments in attaining a representative work force through developing human capital was presented in terms of promoting social equity. That concept still has good currency. However, it is now clear that such policies are also wise investments for the future. Employers who demonstrate an appreciation for the contributions of all workers, willingness to invest in their education and development, and aggressiveness in promoting cultural diversity will be well-equipped for the coming labor shortage.

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