ABSTRACT
                There is mounting evidence that the most significant
deficit of new work force entrants is not an "academic skills gap"
but rather poor attitudes concerning work. Despite growing
recognition of their fundamental link to the quality of the work
force, work attitudes have received virtually no detailed discussion
in the public policy arena. Research on socialization and
longitudinal studies confirm that work attitudes can indeed be
influenced. Employer surveys and personality-based research studies
indicate that the strength of the link between various personality
traits and job performance varies widely across occupations. Research
also confirms that managers can raise worker's motivation,
initiative, self-determination, and persistence by providing positive
feedback, information, and choices for workers to make. Another
important research finding is that prosocial behavior can be
developed both on the job and during early childhood. Because family
background and early life experiences are good predictors of
"hard-core unemployment" and because the key to shaping individuals'
moral development probably lies at some middle ground between the
social learning and cognitive development perspectives, it appears
likely that schools can shape work-related values. The approach of
teaching values along the lines of social learning or the
situationist model also appears promising. (Contains 82 references.)
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Is the "Skills Gap" Really about Attitudes?

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I. Overview

The relationship between economic competitiveness and the quality of the workforce is a topic of heated debate in the United States, and much of that debate centers on whether high school graduates are adequately prepared for the work world.

In the early 1970s, there was a similar debate about the relationship between declining national productivity and the performance of the workforce. The general conclusion was that the production workforce did not necessarily lack academic qualifications (e.g., Berg [1971]). Indeed, many workers then entering the labor force were overqualified for their jobs in terms of formal academic credentials, which may have contributed to problems by creating unrealistic job expectations. Workforce productivity problems seemed to lie within worker attitudes rather than with academic skills. Especially in manufacturing, poor worker attitudes in areas such as job satisfaction, commitment, and citizenship contributed to productivity and quality problems and (in some cases) to outright sabotage. The efforts to address these problems focused on redesigning jobs to help meet workers' psychological needs and improve work attitudes, and led to the "quality of worklife" movement in the United States (see Work in America [1975]).

By the mid-1980s, arguments about the relationship between the workforce and competitiveness suggested a new problem—workers entering the labor force were inadequately prepared for work. The argument was not so much about a lack of vocational or occupational skills (e.g., those particular to a bookkeeper or machinist), but about deficits in more basic educational skills. In brief, this view stated that workers have inadequate levels of the basic educational skills needed to handle new work systems and technologies. These arguments recognized that employees receive most of their occupational skills after they have obtained employment. The high level of change experienced in many U.S. organizations and the need for flexibility also suggest that basic skills common to a range of jobs are important, and that a solid grounding in reading, writing, arithmetic, and communication skills would help graduates learn how to learn and how to adapt to changing demands in their jobs.

This position, which might be called the "academic skills gap," seems to have come less from direct evidence than from the logical combination of a series of related arguments. Reports such as A Nation at Risk (1983) warned about deteriorating student performance in secondary schools; Workforce 2000

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(1988) argued that in the future the distribution of jobs would shift toward those positions that require higher levels of academic ability; and anecdotes about incredibly low levels of basic literacy among entry-level job applicants in urban areas helped to cement the conclusion that while the "supply" of skills among new entrants was eroding, "demand" in the form of rising job requirements was increasing—hence, the formation of a skills gap.

More recently, new evidence has argued that some assumptions underlying the academic skills gap position are shaky. Subsequent evaluations of secondary school performance indicate that although there clearly are problems with student performance—especially in urban areas—academic achievement overall appears to have rebounded from the lower levels of the late 1970s. By many important measures, student performance appears to be better than ever (see Bracey [1991]).[1] Similarly, reanalysis of data used in *Workforce 2000* suggests that the predicted sharp shift in employment toward higher-skilled jobs may not take place in the near future. Indeed, the rate of the projected shift toward higher-skilled jobs in the economy appears to be slowing down, compared to prior decades (see Howell and Wolff [1991]; Mishel and Teixera [1991]). While some types of jobs are seeing a rise in skill requirements (notably production work), other jobs show no clear pattern (Cappelli 1991a).

Other data also suggest a lack of evidence to support the idea of an academic skills gap. Academic success in school, as measured by grades, is a poor predictor of success on the job: students who achieve more and perform better in school do not necessarily make better workers.[2] Bishop (1991) finds that higher competencies in math, verbal, and science abilities, as measured by the Armed Services Vocational Aptitude test, actually received a negative reward from the labor market in terms of wages for high school graduates. Apparently, these higher competencies were not required in the jobs held by the typical graduate.

The more telling type of evidence about the deficits of high school graduates has been obtained by asking employers about their experiences with applicants and newly hired workers. What characteristics do they believe entry-level candidates need in order to be successful, and, more importantly, what are the current deficits that they find among applicants and new workers? Consider the following results from surveys of employers.

- A 1983 survey of executives by Research and Forecasts found that "character" was the applicant characteristic most often given primary importance in hiring decisions (48 percent); only 5 percent ranked "education" first (Barton 1990).

- The Committee for Economic Development's (1984) survey of small employers concluded that their top priority in seeking applicants was "a sense of responsibility, self-discipline, pride, teamwork, and enthusiasm."

- A 1989 employer survey by Towers Perrin found that the most common reason for rejecting applicants (other than a lack of prior work experience) was the belief that they did not have the work attitudes and behaviors to adapt successfully to the work environment. The most common reasons for firing new hires were absenteeism and failure to adapt to the work environment; only 9 percent of workers were dismissed because of difficulties in learning how to perform their jobs—the category most suggestive of a basic skills deficit.[3]

- A 1990 survey of the National Association of Manufacturers (NAM), conducted by Towers Perrin, found that the belief that applicants would not have the work attitudes and behaviors needed to adapt to the work environment was almost twice as common a reason for rejecting applicants as the next most important factor.

- A Committee for Economic Development (1991) survey conducted by Louis Harris found that dedication to work and discipline in work habits were the biggest deficits that employers saw in high school graduates who were applying for jobs.

These surveys suggest that the most significant deficit in new workforce entrants is, in the opinion of many employers, the attitudes concerning work that they bring with them to their jobs. Many recent public policy recommendations have begun to include the development of employee attitudes as a crucial part of workplace skills. The Jobs Training Partnership Act (JTPA) requires that "work maturity" (punctuality, the ability to follow and carry out orders) be one of the three main outcomes of its training programs. The National Alliance of Business (1987) identified attitudes such as responsiveness and reliability as important characteristics of workforce readiness. Most recently, the Secretary's Commission on Achieving Necessary Skills (SCANS 1991) identified a set of "personal qualities" (e.g., responsibility and sociability) that comprises one third of the basic skills foundation required for a quality workforce. (It should be kept in mind that this shift in discussion does not suggest that the problems with basic academic skills have been solved.) Although there is no easy way to know whether worker attitudes are more of a problem now than in the past (e.g., during the 1970s), there is no doubt that the problem exists today and demands greater attention than it has been given.

II. Work Attitudes and Public Policy

Despite the growing recognition that they are a fundamental component of a quality workforce, work attitudes have received virtually no detailed discussion in the public policy arena. Each report that mentions worker attitudes seems to emphasize a different set of elements or define the relevant attitudes in different ways; and the ways in which these attitudes might be developed is almost never discussed. In many cases, the discussion of attitudes is simply tacked on at the end of a "wish list" of skills that workers should have. The lack of clarity and information makes it difficult to know whether any consensus exists concerning problem areas and whether proposals for the development of work attitudes are reasonable.

Work attitudes refer to an individual's tendency to evaluate and respond to given situations. Someone with a negative attitude toward authority, for example, might interpret questions from a supervisor as interference and respond defensively, while someone with a more positive attitude might evaluate the same questions as interest on the part of the supervisor and respond as if being praised. There are, of course, "strong situations" in which rewards and punishments, pressure for conformity, the emotional appeal of leaders, and other situational factors are so powerful that they almost completely dominate the evaluations and responses of individuals. But such situations are rare in the workplace. In most jobs and especially for those with more complex tasks, employees have considerable autonomy in understanding the goals and values of their organizations and in determining how they perform at least some aspects of their work.[1] How workers perform their tasks, therefore, is shaped by their attitudes; and the more autonomy jobs allow, the more important attitudes are for job performance.

The work attitudes of a labor force can be thought of as an important component of the infrastructure of doing business. When workers lack appropriate work attitudes, employers have to provide costly substitutes or, in some cases, they must forgo technologies or markets entirely. For example, employers may have to introduce expensive monitoring systems in departments in which theft is a problem; high-performance work systems that rely on shifting responsibility to workers will fail when workers will not take responsibility; and customers and markets that demand high levels of personalized service will be lost if employees have poor attitudes toward other people.

Research has found that positive attitudes are related to

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higher levels of job performance. For example, Mathews, Whang, and Fawcett (1981) argue that job attitudes and job-related behaviors may explain why some people have difficulty finding jobs, and they find systematic differences in the job attitudes and behaviors of employed subjects as compared to subjects who were unemployed. Super and Overstreet (1960) found that later career success among vocational students was predicted by the maturity of their interests. Johnson, Messe, and Crano (1984) conclude that attitudes toward work, as measured by a survey instrument, predicted job performance. Love and O'Hara (1987) found that supervisory ratings of subordinates' work maturity predicted a range of job performance outcomes. In this study, "responsibility and self-initiative" were the aspects of work maturity most closely associated with perfor-mance, and "initiative" was the aspect of performance that had the strongest relationship with work maturity. Proper work attitudes may be as necessary to organizational performance as adequate levels of educational skills.

But the question of whether public policy should be respon-sible, even in part, for developing work attitudes depends upon the means through which those attitudes are generated. The debate that is central to work attitudes research is the extent to which attitudes are the product of deep-seated, stable disposi-tions or the result of the situation in which employees find themselves.[5] The closer one gets to an extreme position on either side of this debate, the less of an issue of public policy it becomes. For example, if attitudes are the result of genetically based predispositions, it would be virtually impossible to develop a workforce with "better" attitudes (which would require the ability to manipulate the gene pool). In this scenario, the selection of employees who have appropriate attitudes becomes most important for employers because of the difficulty of changing poor attitudes; there would be little role for public policy actions.[6] Similarly, if all attitudes are situational in their basis, the attitudes of a workforce would be completely specific to the circumstances provided by each employer. Again, there

would be little role for public policy. Each employer would be directly responsible for the attitudes held by their workforce.

The middle position offers the strongest arguments for public policy action. If attitudes can be shaped by experience, but once shaped persist over time, then efforts to produce positive work attitudes should be part of the public policy agenda, especially given the already existing resource and policy involvement in educational programs. Schools might be one logical place to help develop positive workplace attitudes; and virtually any program directed at youth before they enter the full-time workforce (e.g., athletic or summer job programs) might also offer good opportunities.

Although certainly there is sharp debate about the nature of work attitudes, most observers appear to recognize reasons that support the existence of a middle position. Van Maanen and Schein (1979) have produced a useful review of existing research on the ways that workers can be socialized into desired work roles and attitudes. Clearly, there are situations that are thorough and intense enough to produce similar work attitudes in most participants: military "boot camp" exemplifies such a strong situation. Finding longitudinal data with which to test for the persistence of attitudes over time is more difficult. The paucity of such data has held back the empirical side of the debate, but nevertheless there is persuasive evidence that work attitudes do persist from childhood (see Staw et al. [1986]). The dual conclusions, that work attitudes can be influenced (research on socialization) and that they are persistent (longitud-inal research), suggests there is room for the middle position that supports a public policy interest in workplace attitudes.

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III. Which Attitudes Are Important for the Workplace?

The next step in the analysis is to identify the set of attitudes that are most important for the performance of jobs. Many of the work attitudes that employers mention most frequently focus on basic dispositions toward the outside world. These dispositions are closely associated with the concepty of personality. Literally thousands of aspects of personality have been identified, although most of the popular frameworks condense them into a few factors.

Despite the fact that employers list personality characteristics as central to work performance, researchers frequently have found that a worker's personality often is a poor predictor of actual job performance. Surveys of the field find that the average relationship between measures of personality and job performance across studies is weak (e.g., Schmidt et al. [1983] and Reilly and Chao [1982]). Grimsley and Jarrett (1975), however, found strong relationships between personality and job performance and argue that their results were better because their data were obtained in the context of employment—as opposed to the majority of studies, in which data are obtained under research conditions and, presumably, are less valid. Bentz (1968) also reports exceptionally high validity rates for the personality-based assessment systems used at Sears Roebuck and Company.

In addition, the personality-based research includes a wide range of variables, not all of which are necessarily related to job attitudes. Sparks (1983) reports on a study at Standard Oil, that found that the relationships to subsequent performance were very different for work attitudes and personality. Ghiselli (1973) and Hunter and Hunter (1984) found in their surveys of the selection literature that the relationships between personality and performance varied widely across occupations—from being among the best predictors for many occupations such as managers and sales to below average for industrial jobs.

Relevant Aspects of Personality

The Miner Sentence Completion Scale measures personality traits thought to determine the motivation of respondents to manage, and has been found to be one of the most successful predictors of managerial success (e.g., Miner and Smith [1982]). It measures traits such as the desire to engage in competition, be assertive, impose one's wishes on others, and stand out from the group.

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A new survey of personality research by Barrick and Mount (1991) uses a taxonomy of personality dimensions, around which a consensus recently has emerged, and suggests a potentially more positive relationship with performance. They found that conscientiousness, which can be thought of as dependability or will to achieve, was the aspect of personality most consistently related to job performance. It was significantly related to all measures of job performance for all occupational groups—from success in training and job proficiency to productivity and promotion (the relationships are not necessarily large, however, never above .13). Other dimensions of personality sometimes cited by management as important for job performance, such as compliance, social conformity, and perseverance (labeled "Agreeableness" in the taxonomy used by Barrick and Mount), did not predict performance nearly as well. Andrisani and Nestel (1976) found that workers who have "internal control" achieve more than do workers who have personalities oriented toward external control.

Motivation

Motivation is sometimes described as the force that drives and directs behavior or the desire to behave in a particular way. Many scholars believe not only that there are differences in motivational orientation between individuals, but that those differences take the form of dispositions that endure over time (e.g., Harter [1981]; Pitman et al. [1982]). Perhaps the most widely discussed attitude related to motivation is "need for achievement" (nAch), which can be thought of as an aspect of personality that determines the desire for individual success. McClelland and Boyatzis (1982) present evidence that nAch was especially important in predicting the success of lower-level managers and entrepreneurs. For higher-level management in complex organizations, where more than just "drive" is necessary to get ahead, political skills in particular are important: a combination of needs (high need for power/low need for

affiliation) predicted performance. A recent survey of nAch research finds that it can be a very strong predictor of job performance when characteristics of the work situation are supportive—for example, when workers perceive opportunities for success (see Spangler [forthcoming]).

McClelland (1961) argued that while nAch appears to be a part of personality, it could be developed in individuals through training programs. The more successful techniques for raising motivation include the following:

- **Supervisor Expectations. Sometimes known as the "Pygmalion effect," motivation, attitudes, and subsequent performance are higher when instructors or supervisors have higher expectations for the performance of participants.**

- **Goal Setting. Motivation and performance of participants are higher when they voluntarily agree to use clear, challenging targets to gauge their performance. Motivation is provided by the pressure to avoid failing at something to which one has made a public commitment, and thereby losing face.**

- **Expectancy. Motivation and job performance are higher when participants expect that their performance will lead to a reward that they value; greater rewards and clearer relationships between performance and rewards lead to greater motivation.**

- **Modeling. High levels of motivation and performance can be learned by observing role models who manifest those characteristics. Conformity pressures help produce a positive result.**

These efforts raise motivation by manipulating the situation in which participants function. The important question, about which we know less, is the extent to which motivation is changed even after participants leave these situations.

Initiative and self-determination are characteristics closely associated with motivation. Initiative is important in part because it is a substitute for supervision and monitoring.

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Research shows that management practices can raise levels of worker initiative by providing positive feedback. information, and choices for workers to make (Deci et al. 1989). Previous research has shown that teachers can raise the level of initiative among their students in similar ways—by giving students some autonomy, acknowledging their perspectives and interests, and by providing feedback (Ryan et al. 1983; Deci et al. 1981).

Persistence is an important work attitude that employers sometimes include under the general category of motivation. One can think of persistence as continuing effort made in the absence of positive feedback indicating success. While persistence can in some situations be a problem (i.e., where one refuses to heed negative feedback and persists in an irrational course of action). it is generally thought to be an importa..: and useful attribute. Staw and Ross (1980) find, for example, that workers who persist are evaluated more positively by supervisors. There is an extensive literature in psychology on the opposite of persistence, "learned helplessness," which indicates how situations can teach people not to persist. And Sandelands, Brockner, and Glynn (1988) show that persistence can be increased when the costs of giving up are increased.

Prosocial Behavior

Prosocial behavior refers to a range of actions, in which members of organization; go beyond their proscribed roles (often sacrificing their own interests) for the good of the organization or others in it. One currently popular aspect of prosocial behavior is known as citizenship (see Smith et al. [1983]). which is described as altruistic efforts to help others in the organization, often at one's own expense. The key element of citizenship is that individuals do not believe that they will be rewarded nor that the authority structure will even be aware of their actions. It may be helpful to think of citizenship as attempting to measure what people do when no one is looking. Examples might include soldiers in wartime who take significant personal risks to aid their comrades or workers who go out of their way to help new

hires understand their jobs. Some aspects of citizenship also include actions taken for the benefit of the organization, *per se*, such as being punctual or voluntarily limiting time off from work.

Commitment to the organization is a related concept that captures an individual's interest in remaining with the organization, accepting its goals. and working on its behalf. Reduced turnover and high levels of effort are some of the benefits of organizational commitment, along with a willingness to comply with the rules of an organization (see Mowday et al. [1982]).

Much of the research on the causes of prosocial attitudes and behavior is recent, and it reflects the usual situational/dispositional debate. Evidence suggests that prosocial behavior is associated with reasonably stable, long-term dispositions. Rushton (1984) has reviewed research that suggests that there is a relationship between prosocial behavior and personality, and high levels of prosocial behavior are associated with greater empathy and universal standards of justice that are internalized. Need for achievement is also associated with commitment and related behaviors (Mowday et al. 1982: Puffer 1987). Li-Ping Tang and Baumeister (1984) found that workers who endorsed the values associated with the work ethic spent more of their free time voluntarily performing organization-related work (citizenship), a result also found for commitment (Mowday et al. 1982).

Most of the research exploring the causes of prosocial behavior is directed toward identifying situational factors that might explain it.[8] Some of tl se factors are clearly within the control of individual employers. Satisfaction with one's current job is a good predictor of citizenship (e.g., Bateman and Organ [1983]; George [1991]). and more positive moods are also associated with higher levels of prosocial behavior. Clark (1981) reports that prosocial behaviors are higher when a worker's sense of belonging to a group is higher. Modeling and social learning from supervisors, for example, and reinforcement (presumably for those aspects that can be monitored) can also

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strengthen prosocial behaviors (see Brief and Motowidlo [1986]). Eisenberger, Falsolo, and Davis-LaMastro (1990) have found that a perception on the part of workers that the organization valued them was associated with greater conscientiousness. Caldwell, Chatman, and O'Reilly (1990) found that a strong organizational culture is associated with higher levels of commitment. Allen and Meyer (1990) and Caldwell, Chatman, and O'Reilly (1990) found that the way workers are socialized or orientated into the organization shapes prosocial behavior. Further, there is evidence that one's early experiences in employment are the most important for developing prosocial attitudes (e.g., Bray et al. [1974]).

Most important from the perspective of public policy is the conclusion that prosocial behavior can be developed not only on the job, but also as a result of experiences in early childhood. Researchers have found that interventions in the classroom lead to improvements in cooperation, helping behaviors, and student discipline (e.g., Solomon et al. [1988]; Battistick et al. [1989]). The fact that prosocial attitudes and behaviors can be influenced early on and that they may persist—in the form of dispositions—suggests that there may be an important public policy interest in developing these attitudes.

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IV. How to Change Work Attitudes

Research on the "Hard-Core" Unemployed

The "Great Society" programs of the late 1960s spawned the last reconsideration of the relationship between job skills and economic performance. Research designed to improve the labor market performance of the unemployed, especially the "hard-core" or chronically unemployed, was based on the assumption that this group lacked values and work attitudes that were appropriate for the world of work. But as Goodman, Salipante, and Paransky (1973) noted in their survey of this research, programs designed to change the work attitudes of the hard-core unemployed were typically unsuccessful. O'Leary (1972) reports a study in which "improved attitudes toward oneself" in subjects actually led to worse attitudes toward work. Friedlander and Greenberg (1971) conclude that it may be easier to adapt organizations to meet the special demands of this group than to adapt their attitudes to those required by traditional organizations.

One conclusion from this research might be that once workers are in the labor force, it is too late to try to change their work attitudes. The Goodman, Salipante, and Paransky (1973) survey finds that family background, especially the extent of unemployment among adult males in the family, was a powerful predictor of hard-core unemployed status, suggesting that the pattern is set early in one's life.

Moral Development

Within the field of developmental psychology, the topic most closely related to work attitudes is the study of moral development, which investigates how children develop values. Coles (1986) and other researchers have brought to popular attention the diversity of values in children and the complex process through which values are acquired. The debate in this field is related at least partially to the situation/disposition views. The social learning perspective (essentially the situationalists') emphasizes that traditional learning approaches, such as role models and reinforcement, shape the values of children. The cognitive development view argues that children create their sense of values through an internal, cognitive process that follows predictable stages and that is largely independent of situations (although cognitive development scholars believe that interventions can help develop values in students)." While the social learning view is probably the dominant perspective, most scholars see room for a middle position that recognizes a role for both views.

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V. Should We Teach Work Attitudes?

In 1976, Bowles and Gintis published their *Schooling in Capitalist America*, which became a highly influential critique of the U.S. public school education. They argued that the U.S. educational system reflected the needs of the free enterprise system, and the business community in particular, because it produced students who were socialized into the norms required in the work place.[10] Given this indictment, it truly is ironic to find that in the 1990s, the most popular critiques of education, especially among employers, suggest that schools do not prepare students for work, but that they should be doing so.

What readers found disturbing about the Bowles and Gintis critique was that the authors argued that the values, norms, and behaviors being inculcated into students through the schools appeared to be in conflict with values associated with personal growth and development. In particular, the value "compliance with authority" was described as an attitude necessary to success on the job. But much of the evidence that Bowles and Gintis used to show a tight relationship between educa ion and work was refuted subsequently by evidence in personnel psychology.[11] Most importantly, it was found that consistency—not compliance with authority—appears to be the best predictor of job performance.

Certainly there is a host of problems associated with having schools teach values. They range from philosophical objections about government-induced paternalism (see Beardsley [1980]) to practical concerns about which set of values should be taught. On the other hand, efforts to teach values in school have a long history in the United States (see Nelson [1980]), and there even have been attempts to introduce cognitive development programs to schools.[12] The current interest in teaching values in U.S. public schools seems focused in part on attempts to halt destructive behavior outside school, especially in inner cities (see *Philadelphia Inquirer* [1991]). There is, however, a clear overlap between these values and many of the work attitudes that have been described in this paper.

There are two arguments in favor of trying to develop values that approximate some of the work-related attitudes described above. First, characteristics such as consistency or prosocial behavior would seem to be of broad benefit to individuals and society and do more than simply aid employers. Second, and perhaps more important, is the fact that students inevitably pick up values and attitudes from their experiences in school, whether we intend them to or not. Experiences with the education system, with teachers, and especially with peers implicitly

shape the attitudes of students even if there are no explicit efforts to teach values in the classroom.

To teach values along the lines of the social learning or situationalist model, schools need to create the kind of strong situations that socialize students into accepting specific sets of values and attitudes. This is a much easier task for private schools, where explicit use can be made of religion, external cultures, community norms, and rewards and punishments (especially expelling those who do not fit in) as a way to reinforce norms and values.[13] Public schools have fewer of these mechanisms to use.

Endnotes

[1] A good overall guide to student performance over time is the National Education Goals Panel's *Report Card for Education* (1991), which shows that academic achievement has changed relatively little over the last few decades and has made some important gains in the 1980s—reductions in dropout rates and improved performance of minorities in particular. It may be reasonable to say that this performance is not good enough, but that is not akin to arguing that it has deteriorated.

[2] See Cappelli (1991a) for a review.

[3] Both Towers Perrin and NAM data were made available to the National Center on the Educational Quality of the Workforce.

[4] Consider how difficult it would be to have truly strong situations at the workplace. It would require identifying every task an individual performed, setting precise standards for their performance, monitoring every aspect of that performance, and basing rewards and punishments on the results. Monson, Hesley, and Chernick (1982) use laboratory experiments to show that the relationship between personality and behavior increases as the constraints provided by the situation are reduced.

[5] See Bell and Staw (1989) for a recent argument in support of the former view; Betz and colleagues (1989) for the latter.

[6] The most important effort to examine the genetic bases for social behavior are the recent studies of identical twins, comparing pairs who were separated and raised in different families to pairs who were raised in the same family. While work attitudes, *per se*, are not a focus of these studies, there is strong evidence from them of the existence of genetic links to personality (see Bouchard [1990]).

[7] The basic principles for raising motivation are associated with learning theory. See Cascio (1987) for a guide to these principles applied in the context of employment.

[8] Brief and Motowidlo (1986) review this literature in depth.

[9] See Kohlberg (1969) for a discussion of the cognitive development position.

[10] Berg (1971) may have set off this entire line of thinking by questioning whether schools provide any job-related skills in the usual sense; Thurow (1975) made a similar argument to Bowles and Gintis (1976) that schools were really teaching trainability and discipline more than any job-related skills; Collins (1979) gave the argument a slightly different emphasis by focusing more on the social skills acquired in school, such as civility.

[11] In addition, they argue that what schools reward and what jobs require are similar, but the poor correspondence between grades and job performance suggests otherwise (see Cappelli [1991b] for a review); their summary of the literature as of 1976 suggested that cognitive ability is a poor predictor of job success, but more recent studies in psychology suggest that it is in fact among the best predictors of job performance (see Hunter and Schmidt [1984] for a literature review).

[12] See Feldman (1980) for a critical review.

[13] A good example of the more extensive role of values in private education is the recent advertising for Catholic schools which suggests that parents will "appreciate the values" of a parochial education.

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