RUNNING HEAD: Workers' Skills Gaps

As Workers' Skills Gaps Widen, Will the Future Workplace Be an Abyss?

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Abstract

For more than twenty years, employers and researchers have recognized substantial gaps in vital skills among workers entering the job market. More significant than language and computational knowledge, employees lack essential "life" skills that are critical in the workplace, such as appropriate communication and being on-time. Specifically, higher-order cognitive skills are often missing or remarkably underdeveloped. Private and governmental initiatives have been historically ineffective at remediating work-readiness gaps. Employers face great challenges as members of the Millennial generation enter the workforce; their cultural norms confront existing workplace cultures; and, technology becomes entrenched. This paper reviews selected federal initiatives and private programs and provides commentary from leading researchers who describe workplace challenges and suggest changes to existing models. The information provided here is equally relevant for secondary and post-secondary faculty and administrators, workplace training facilitators and managers, and policymakers.

Workforce Readiness. Workforce Readiness. Workforce Readiness. Sadly, chanting these words three times and clicking our heels will not magically transport us to the desired goal. There is no Good Witch standing by, ready to wave her wand and make all our dreams come true.

"It's time to stop being reactionary and start being proactive," warns Dr. Darrell Luzzo, Chairman of the National Work Readiness Council (NWRC), a consortium that includes businesses, labor unions, chambers of commerce, education and training professionals, and several states' Workforce Investment Boards. "Entry-level workers, especially, have gaps in basic skills that enable success in the workplace," Luzzo explained (personal communication, 2007).

What are these basic skills? What are the gaps? Where does responsibility for identifying and remediating workers' skill gaps lie? Is it appropriate for present-day business and education models to direct the behaviors of future workers? And, what effect will answers to these questions have on the future of workplace training?

The interwoven relationships among workforce readiness, business and industrial development, and schools have existed since the institution of public education in the United States. During the last third of the 20th Century, however, this relationship was targeted by U. S. Departments of Labor and Education, business and industrial councils, educational administrators, and public policy. America realized its future employees and entrepreneurs were not prepared to enter workplaces of the future.

For more than twenty years, deficiencies in transferable workplace skills have been a focus of federal workforce initiatives (Overtoom, 2000); yet, enacting a plethora of laws, goals, and guidelines has not resolved the problems. Early federal legislation addressed only preschool, primary, and secondary education, with no direct mention of workplace skills development. By the 1990s, Congress and the Cabinet recognized a need to include higher education and established the year 2000 as a target for maximum workforce readiness. The Secretary of Education's Commission on Achieving Necessary Skills (SCANS, 1991) report, *What Work Requires of Schools*, identifies critical competency areas for workplace success. In 1994, Congress enacted the *School to Work*

Opportunities Act and the *Goals 2000: Educate America Act*, which incorporated the *National Skills Standards Act* and created the National Skills Standards Board. Just four years later, Halperin (1998) reported a majority of students leave secondary education with deficiencies in workplace skills. The end of the 21st Century's first decade is near, and workforce readiness remains in a crisis state.

Workers' transferable skill levels have likewise been a concern in the private sector for more than twenty years (Overtoom, 2000). Reviewing trends from the 1970s and 1980s, the National Alliance of Business (1987) published concerns about "the consequences of business for an ill-prepared workforce" (p. 2). The Commission on the Skills of the American Workforce (CSAW, 1990) report, *America's Choice: High Skills or Low Wages!*, predicts a future where empowered workers exercise judgment and make front-line decisions. Other well-known initiatives and important studies include Equipped for the Future (EFF; ongoing since 1994), American Society for Training & Development (ASTD; Carnevale, Gainer & Meltzer, 1990), and National Academy of Sciences (NAS, 1984).

Most employers and workers initially think of reading literacy and computational skills as "basic" requirements for the workplace. However, every workforce readiness initiative listed here, plus those adopted by individual U. S. states, contains references to basic "soft" skills requirements: interpersonal and intrapersonal knowledge, skills, and abilities such as ethics, personal organization, time management, teamwork, and managing one's learning. NAS (1984) lists reasoning and problem solving, interpersonal relationships, and personal work habits, among its eight targeted skill categories. "Soft" skills comprise eleven of the sixteen essential skills identified by EFF, five of the seven ASTD skill groups, and multiple SCANS competencies. *America's Choice* reports more than 80% of employers were concerned about workers' "soft" skills deficiencies (CSAW, 1990).

While there is a dearth of recently published, empirical research on the topic of workforce readiness, the preponderance of opinion among authors in the past few years supports the notion that higher-order thinking skills — application, analysis, synthesis, and evaluation — as described in Bloom's (1956) Cognitive Taxonomy are the most

fundamental. ASTD listed learning how to learn as "The Foundation" of workplace skills. Likewise, consciousness of one's learning is recognized as a critical requirement by SCANS, NAS, EFF, and numerous independent studies. The New Commission on the Skills of the American Workforce's (2006) latest report declares mastery of higher-order thinking skills may define success and failure among 21st Century workers.

Higher-order cognitive functions are often described as "metacognition." Martinez (2006) identifies the components of metacognition as: metamemory and metacomprehension, or one's ability to appraise the correctness of his own recall; problem-solving, or the steps one takes when faced with the unknown; and critical thinking, or evaluating the quality of an idea. As focus shifted to educational accountability and individualized instruction in response to federal legislation in the 1990s and the *No Child Left Behind Act of 2001* (NCLB), Americans recognized the need for learners to be aware of their own thinking and the state of their own learning and charged primary and secondary schools with identifying and remediating metacognitive deficiencies.

Does responsibility for developing workforce readiness, especially in terms of metacognitive skills, rest with primary, secondary, or even post-secondary educators? What about the population of future workers who are unable to engage in higher-order thinking as a result of physical or psychological barriers? Specifically, individuals with ADD/ADHD, Autism Spectrum Disorder, and certain other learning disabilities are often unable to monitor their own learning (Woog, 2007; Zecker, 2005). A significant portion of the 21st Century's rising workforce has benefited from Individualized Education Plans (IEP) and other accommodations under the *Individuals with Disabilities Education Act* (1990, renewed 2004). However, there is no IEP requirement in the workplace.

Business faces additional challenges from the newer generation — born between 1979 and 1999 and commonly called "Millennials," "Generation Y," and "NetGen" — entering the workforce. NCLB presumably precludes their academic failure as primary and secondary students. Yet, there is no corresponding protection in the workplace. Gardner (2006) reports most employee discipline problems and stalled promotions

among Millennials result from deficiencies in "soft" skills. Members of this generation have been sheltered throughout their lives by parents and other adults. If Millennials fail at work, parents are often happy to rescue them and even provide housing and extended financial support. Many parents intercede with their children's employers, often without being asked. Parents' continued hovering on the periphery of their adult children's lives and careers gave rise to such derogatory descriptors as "tethering" and "helicoptering" (Tyler, 2007).

Millennials embody unique characteristics that present significant challenges to society and the nature of work as it is currently defined. Published reports thus far indicate the phenomenon is global. Tyler (2007) reports Millennials have lived entirely with digital technology, nearly instantaneous information accessibility, and always connected to their friends or parents. Prensky (2001) calls this generation "digital natives." Millennials have always been told they are special, instantly gratified, rewarded nearly immediately for even the smallest accomplishments, and allowed to converse with adults as though they were peers. Parents permitted Millennials to participate in making decisions about their heavily scheduled and structured lives. Yet, Millennials are typically unable to commit without consulting parents or peers and relying heavily on their input (Tyler, 2007; Tucker, 2006). While the new generation's lifestyle may not be bad, it certainly presents obstacles for employers.

Published studies find Millennials as a group are disrupting the workplace status quo. On the positive side, they are intrinsically multicultural and group-oriented. Yet, employers are challenged by Millennials' desire for workplace fun, extremely flexible schedules, unencumbered time and access for personal Web-surfing and electronic communication, and unlimited time off for family, friends, and volunteer commitments. Millennials have inherent disregard for organizational charts and disrespect for the buffers of "position." Perhaps as a result of observing massive downsizing and economic instability, they have little brand loyalty to employers and consider job-hopping perfectly natural. Luzzo describes Millennials' collective attitude as "'me' expectations" and believes it negatively affects their workplace success (personal communication, 2007) .

The *School to Work Opportunities Act* (1994) admonishes, "[T]he United States lacks a comprehensive and coherent system to help its youths acquire the knowledge, skills, abilities, and information . . . necessary to make an effective transition from school to career-oriented work or to further education and training" (Title VIII, Section 2(5)). The *Act* advocates contextual, work-based learning similar to apprenticeships and funds three venues: school-based learning, work-based learning, and connecting (transitional) activities. Thus, the *Act* distributes the burden for identifying and remediating skills gaps among educators, employers, and ancillary service providers.

For-profit, non-profit, and governmental organizations and consortia support worker credentialing to verify an individual has a basic set of transferable skills for entry-level jobs. ACT, Inc., adapted its WorkKeys® system to create the National Career Readiness Certificate, which tests skills in math, reading, and locating information. The NWRC, described previously, tests in four skill areas: situational judgment, oral language, reading comprehension, and problem-solving with applied math. The test draws on EFF's sixteen skill areas and specifically focuses on entry-level workers (SRI, 2005).

Because federal initiatives tend to fade out, it will be interesting to monitor the viability of private-sector credentialing programs. After bringing its expertise and name recognition to the NWRC consortium, Junior Achievement produced two high school-level modules that incorporate fundamental skills for business success and workplace ethics. Using volunteers in the classroom to facilitate learning activities is a fundamental part of JA's methodology (Luzzo, personal communication, 2007). Unfortunately, most of the students JA needs to reach want highly interactive instructional delivery that suits their connected lifestyles (Prensky, 2005).

In the past two decades, learning activities have morphed from the traditional classroom (pen/paper/blackboard/textbook/one teacher) to today's on-line or multimedia presentations. The basic structure has not changed because training is still essentially a one-to-many distribution. Prensky (2005) warns existing education models, training, and experience are insufficient preparation for designing and delivering information to the new generation of workers. Instead, he suggests training

must be deployed electronically in order to engage and maintain Millennials' interest and satisfy their on-demand, on-line, and interactive learning preference.

Tucker (2006) suggests Millennials must be engaged in active learning that effectively teaches metacognitive skills. Citing the research of John Seely Brown <www.johnseelybrown.com>, Snyder (personal communication, 2007), notes that on-line systems for teaching higher-order interactive and analytical skills are being beta-tested. Successful e-learning applications in workplace training can be expected to quickly migrate into K-12 curricula where they should prove effective in shrinking the metacognitive skills gap in public schools.

Prensky (2005) recommends lifelong use of games as the basis for all education and training of Millennial learners. Snyder (personal communication, 2007) extols games and simulations as ideal teaching media because at least 45% of Millennials are active learners. Snyder argues, "It is the only way to teach problem-solving, systematic thinking, effective communication, and learning skills" that are critical to workers' success. Citing the research of Levy and Murnane (2004), Snyder reports that jobs requiring high cognitive, analytic, and interactive skills, from consulting to customer services, are the fastest-growing segment of today's labor market. "Every worker will be a 'knowledge worker' from now on," Snyder maintains, "so every student must be given the opportunity to learn necessary skills."

Snyder (personal communication, 2007) extends Prensky's (2005) recommendations by suggesting current education and training paradigms must be supplanted by digital delivery: "Education will be forced to change, just as management is being forced to change to take advantage of the electronic workplace." Snyder forecasts that, within 10 years, most teachers and trainers will be "orchestrators of learning, guiding and monitoring students' performance rather than delivering content." The venue will be on-line, rather than a classroom.

The coexistence of four generations in the workplace is challenging enough even before adding Millennial workers' deficiencies in the "soft" skills that business wants and federal, state, and private sector programs are seeking to enhance. For the most part, however, business is adapting to these new workers. There is wide-spread

agreement among business leaders that the flat, collegial model of networked organization will ultimately prevail over traditional, hierarchical models (Friedman, 2005). In this respect, the new culture of employment is already becoming more accepting of Millennials. This transition will require substantial time, and there no doubt will be many inter-generational culture clashes in the workplace (Snyder, personal communication, 2007).

King (2005) questions if workplace learning models adapt to Millennials, will new strategies be effective with older workers? What performance motivators are required to ensure 100% buy-in? How will business keep training costs manageable in the next twenty to fifty years, considering there will be multiple generational cohorts working side-by-side, and each cohort will have group learning preferences that exacerbate the challenges of accommodating individual learning styles? Snyder (personal communication, 2007) does not believe Millennials and older generations will have problems learning together because their goals for work are not very far apart.

Millennials, however, prefer peer-to-peer learning through connecting and collaborating, which fosters creativity and nurtures higher-order thinking. Collaborative learning is described by Wenger (1999), Brown, and others as "communities of practice." Most people maintain a personal, peer community of practice on whom they rely for information and validation in making workplace decisions. In *Smart Business*, Botkin (1999) describes increased productivity and adaptiveness among businesses that encourage employees' use of communities of practice as compared to competitors practicing worker compartmentalization.

Millennials are accustomed to individually recognizing a need for information then seeking resources and retrieving the information. They want open access, but they want it on their schedules. They want customized training, and they want instant recognition of their smallest accomplishments. Marriott International and other large corporations have developed training called "edutainment" or "edubytes": short bursts of information in fast-paced, highly active, multimedia format that can be downloaded to personal electronic devices, such as PDAs and cell phones. Employees can learn

when, where, and what they choose, in keeping with the self-directed preference that characterizes adult education (Sacks, 2006).

Workplace training and workforce readiness decisions require input from every stakeholder in today's business and educational worlds. If organizations follow the "edutainment" path, a substantial hurdle will arise when HR departments and in-line supervisors no longer control timing and content of training. Likewise, organizations will not be able to monitor who has access to training materials, when they are downloaded, and how/where they are disseminated, including outside the organization. Snyder maintains workers' learning should no longer be controlled. Instead, he argues, "everyone should have full access to any source of information that will facilitate improved performance, and employers should provide that access" (Snyder, personal communication, 2007).

Futurists forecast "most organizations will shift all workers' training to the Internet in less than ten years, including everything from new-recruit orientation to executive development programs" (Snyder, personal communication, 2007). Current e-learning (distance education) is simply a transitional phase until the structure of education completely changes. Snyder continues, "The best companies now budget time for regular training in their employees' work schedules and provide interactive formats, such as kiosks and dedicated computer stations for their workers to access as needed and on-demand." Information acquisition in the workplace takes half the time required for classroom delivery; retention is enhanced by 30%; and, the cost of training is reduced as much as 40%. Positive Return-on-Investment (ROI) is quickly apparent, Snyder (2006) argues, because workers' efficiency is measurably increased.

Should workplace trainers be expected to adapt their teaching methods or delivery systems in order to accommodate Millennials' preference for "edutainment"? Should training be customized to meet the individual attention demands of Millennials? Should training rewards be adapted to accommodate Millennials' need for instant gratification? Given the job-hopping nature of Millennials, should business invest in massive redesigns of existing training programs to suit one group of workers? Is there

hope for a positive ROI for employee training in the future? The answer to each of these questions is "Yes!"

Most big employers understand that good, technology-based learning programs will help attract digital natives and keep them engaged. Employers are already moving toward such technologies as e-learning, computer simulations, and avatar instructors at an accelerating rate because educational technology is finally good enough to reduce training costs while measurably improving its effectiveness. As business fine-tunes digital methods for delivering instruction, there is an expectation that technological advancements will migrate to secondary and post-secondary education and help mitigate the workforce skills gap. Considering the historical failure of school-based initiatives designed to prepare students for the workplace, however, education may be unable to meet the challenge.

NAB (1987) observes "Workforce readiness is a matter of both quantity and quality" (p. 4). If Millennial workers are not ready to meet employability standards of the workplace, can business afford the increased cost of remediation, on-the-job training, additional supervision, diminished productivity, decreased product quality, and reduced customer service that will result? If business relies on primary and secondary education to identify and teach workforce readiness skills, how will such learning fit into an already overcrowded curriculum? When will legislative initiatives and private-sector programs be effective for developing workplace competencies?

Aside from global competitiveness, the greatest obstacles facing business in the next ten to twenty years are workers' training and readiness. The nature of work is changing rapidly, and adaptability requires metacognitive competence. Five seminal studies of workforce readiness skills confirm higher-order thinking is a requirement, and the 21st Century Workforce Commission (2000) reports American workers with higher-order skills will command premium compensation. "Soft" skills are equally essential (O'Neil, 1992). While workers need to adopt critical skills for workplace success, business and its current training paradigms must adapt to successfully respond to the future workforce.

Snyder (2007) recently framed this challenge for educators, "Training and education have always been preparation for the future . . . but, what will the future be like?" Snyder (personal communication, 2007) describes the future as a moving target: a work-in-progress that is widely expected to lead us through decades of ongoing innovation and adaptation. America's high school graduates will clearly need to know more than the "3 Rs" to be prepared for the realities of life and work in a time of continuous change. Traditional, teacher-centric, classroom-based instruction must be augmented by technology in order to provide *all* students with mastery of higher-order analytical and work-readiness competencies in order to close the pervasive and pernicious workforce skills gap once and for all.

Footnotes

[1]Herring, McGrath, and Buckley (2007) report as many as 13% of fifth graders in 2004 received special education services. Vogel (1998) estimated as many as 30% of adults could have learning disabilities, with the number increasing to 50-80% of individuals reading below 7th grade level.

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