WORKPLACE SKILLS FOR THE 21st CENTURY IN ORANGE COUNTY

R.S.C.C.D.-WorkPlace Learning Resource Center
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INTRODUCTION

NEW WORKERS SORELY LACKING LITERACY SKILLS

There is a glaring deficiency in reading and writing among new entrants in the American workforce, and that is troubling employers who are being forced to invest in additional training—or look for skilled workers offshore—for one of the most fundamental job skills in the 21st century economy.

The latest report to sound this alarm was published in November 2007 by the National Endowment for the Arts, which concluded that employers ranked reading and writing as the top deficiency in new hires. The study, "To Read or Not to Read," was based on a variety of data sources including a 2006 report by the Conference Board titled "Are They Really Ready to Work?" which concluded that today's American workforce is "woefully Ill-prepared" for the demands of the workplace.

However disparate the sources of the data, the picture presented is one that NEA Chairman Dana Gioia described in the report's preface as "simple, consistent and alarming." The decline in Americans' reading and writing skills has "demonstrable social, economic, cultural, and civic implications." Workers who cannot read and write well earn less and have higher unemployment rates. Employers, meanwhile, must spend more time and money on what is considered a basic skill.

Linda Barrington, research director for the Conference Board and an author of its report, says that even among recent graduates of four-year colleges, new hires were unable to write effective business communication, read analytically or solve problems.

"It's nice that they are reading e-mail and reading comics," Barrington says, "but if they can't turn it into a communication tool, that is where the breakdown happens on the employer side.

The Conference Board study was prompted by a closed-door meeting two years ago with *Fortune* 100 CEOs who worried that the skills gap would only quicken the offshoring of American jobs.

Literacy levels today are similar to those in 1970, according to the Nation's Report Card, the federal government's annual assessment of literacy levels. But the economy has changed drastically since then. Workers today need to be able

to read and analyze complex, often very technical material, like manuals for car mechanics, to succeed in most jobs.

"Jobs that don't have much in the way of skills have moved out of the United States or are not living-wage jobs," says Timothy Shanahan, past president of the International Reading Association and a professor of urban education and reading at the University of Illinois at Chicago. That means that even jobs that are considered low skill require workers to read at an eighth-grade level, he says.

"Schools are not demanding students to read what the workforce is demanding them to read," Shanahan says.

Bill Kozell, who runs Dr. Goodwrite, a Wayne, Pennsylvania-based company that helps workers improve their writing, says the problems come down to basic errors in grammar, spelling, and tone that can nonetheless be disastrous for a company and its image.

"If you can't make sure an e-mail is grammatically correct, what else are you cutting corners on?" says Kozell of the message a poorly written e-mail can send to a client. "Companies invest millions of dollars in their image and it can be undone in a matter of minutes by one sloppy e-mail."

Financial services company Capital One, Kozell says, is one employer that offers remedial English courses to employees. But the skills gap had become a national issue that has prompted federal legislation—the Striving Readers Act of 2007—calling for greater investment in basic reading and writing skills training for high school students.

Barrington says employers should develop a more unified approach toward improving the skills of American students rather than funding a hodgepodge of programs meant to address the problem. Just what that approach should be, however, has not yet been determined by researchers. "It's where we are looking next," Barrington says.

Source: Workforce Management, December 10, 2007, Jeremy Smerd

EXECUTIVE SUMMARY

At the beginning of last century, close to 70 percent of seniors graduated from high school and went on to postsecondary education. Today, researchers estimate that as many as half of high school seniors leave school without the skills they need to succeed in education or the world of work. A 2001 Sacramento Bee article takes it a little further when it states: "the ranks of the working poor are also expanding and California is evolving, minute by minute, into a two-tiered society. Much ballyhooed shortages of software engineers and

others in high-pay, high-skill fields are matched by a strong growth in low-pay, low-skill service industry jobs."

Recent National Assessment of Educational Progress (NAEP) science test results, that revealed California students to be last among students in 40 states evaluated, illustrate the significant gap to be overcome in present student achievement levels. The business sector has confirmed that too many applicants, including graduates, lack the skills necessary for successful employment across many levels of the workforce, and industry reports that it needs well-prepared, skilled workers to fill an increasing number of vacancies in a number of occupations.

A 2000 report from the Employment Policy Forum indicates that as many 70 percent of students entering the workforce do not have simple business and writing skills. Basic communication skills are a concern in all industries. Even though math proficiency is a major indicator of economic success (Rose & Betts/2001), the most recent NAEP for 8th grade math skills revealed that over 80 percent of Black students, approximately 70 percent of Hispanic students, 42 percent of Asian students, and 37 percent of White students in California scored "below basic" – the lowest category.

Concern that California's low-performance in state and national testing is occurring during a period in which students are required to have more substantial knowledge, as well as more technical workplace skills in the post-industrial economy, has brought strong agreement on the need for greater integration of academics into workforce preparation programs. Education, being the most amenable among socioeconomic indicators to policymaking, provides the master plan with a prime opportunity to have an impact on the earnings gap for a majority of the state's and Orange County's students, and thus, future economic vitality.

CONTEXT

WORKPLACE BASIC SKILLS

Today's high-performance workplace requires different employee skills than were needed in the past.
The traditional definition of workplace literacy (the ability to read, write, and compute to meet job requirements) has gradually changed. The new view of basic skills incorporates the skills requested most often by employers.

Basic Skills

Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

- **Active Learning** – Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate and not interrupting at inappropriate times.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, and approaches to problems.
- **Learning Strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
- **Mathematics** – Using mathematics to solve problems.
- **Monitoring** – Monitoring/Assessing performance of you, other individuals, or organizations to make improvements or take corrective action.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Science** – Using scientific rules and methods to solve problems.
- **Speaking** – Talking to others, especially in English, to convey information effectively.
- **Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

COMPLEX PROBLEM SOLVING SKILLS

Developed capacities used to solve novel, ill-defined problems in complex, real-world settings

- **Complex problem solving** – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

RESOURCE MANAGEMENT SKILLS

Developed capacities used to allocate resources efficiently

- **Management of Financial Resources** – Determining how money will be spent to get the work done and accounting for these expenditures.
- **Management of Material Resources** – Obtaining and seeing to the appropriate use of equipment, facilities and materials needed to do certain work.
- **Management of Personal Resources** – Motivating, developing, and directing people as they work, identifying the best people for the job.

- **Time Management** – Managing one's own time and the time of others.

SOCIAL SKILLS

Developed capacities used to work with people to achieve goals

- **Coordination** – Adjusting actions in relation to others' actions.
- **Instructing** – Teaching others how to do something
- **Negotiation** – Bringing others together and trying to reconcile differences.
- **Persuasion** – Persuading others to change their minds or behavior.
- **Service Orientation** – Actively looking for ways to help people.
- **Social Perceptiveness** – Being aware of others' reactions and understanding why they react as they do.

SYSTEMS SKILLS

Developed capacities used to understand, monitor, and improve socio-technical systems

- **Judgment and Decision Making** – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Systems Analysis** – Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- **Systems Evaluation** – Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

TECHNICAL SKILLS

Developed capacities used to design, set-up, operate and correct malfunctions involving application of machines or technological systems

- **Equipment Maintenance** – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- **Equipment Selection** – Determining the kind of tools and equipment needed to do a job.
- **Installation** – Installing equipment, machines, wiring, or programs to meet specifications.
- **Operation and Control** – Controlling operations of equipment or systems.
- **Operation Monitoring** – Watching gauges, dials, or other indicators to make sure a machine is working properly.
- **Operations Analysis** – Analyzing needs and product requirements to create a design.
- **Programming** – Writing computer programs for various purposes.
- **Quality Control Analysis** – Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

- **Repairing** –Repairing machines or systems using the needed tools.
- **Technology Design** –Generating or adapting equipment and technology to serve user needs.
- **Troubleshooting** – Determining causes of operating errors and deciding what to do about it.

These skill findings are consistent with the findings of the Secretary's Commission on Achieving Necessary Skills (SCANS) 1992 report *Learning a Living: a Blueprint for High Performance; a SCANS Report by America 2000,* as well as findings of a 2006 survey of 431 human resources executives by the Conference Board.

SOURCE: Occupational Information Network – O*NET Online; California Labor Market and Economic Analysis 2007, Labor Market Information Division-Employment Development Department (May 8, 2007)

SKILL NEEDS FOR THE AVAILABLE, CRITICAL AND PROJECTED JOBS

The occupational analysis of the top occupations in the High-Growth Job Training Initiative industries in California examines the typical skill requirements for the various occupations and the shared skills required. The skills identified for each industry are from the Occupational Information Network (O*NET) skills database, Labor Market and Economic Analysis, May 6, 2007.

Automotive

Most California employment in the automotive industry relates to selling and maintaining automobiles rather than manufacturing them. Industries that support California automobiles are motor vehicle and parts dealers, gasoline stations, and repair and maintenance facilities. The top 20 largest growth occupations in the automotive industry will grow by 18.7 percent (more than 50,000 jobs) between 2004 and 2014. The occupations vary considerably in preparation required by individuals seeking to enter them.

Of the 20 largest growth occupations in the automotive industry, seven require only short to medium on-the-job training (OJT): retail salespersons; cashiers; cleaners of vehicles and equipment; office clerks, general; counter and rental clerks; helpers –installation, maintenance, and repair workers; and truck drivers, light and delivery services. Five of the largest growth occupations require either postsecondary vocational training or a bachelor's degree: automotive service technicians and mechanics; bus and truck mechanics, diesel engine specialists; sales managers; cost estimators; and general and operations managers.

The automotive industry has initiated efforts to standardize competencies and training for mechanical occupations. The top skills used in the automotive industry's 20 top growth occupations are:

- Active Learning

- Active Listening
- Coordination
- Critical Thinking
- Instructing
- Judgment and Decision Making
- Reading Comprehension
- Social Perceptiveness
- Speaking
- Time Management
- Trouble Shooting

Biotechnology

Biotechnology represents a bright area for job growth and employment possibilities in the near future. Rapid innovation coupled with scientific research means that important discoveries are being made routinely in California's biotech laboratories. Employment in the top 20 high-growth occupations in the industry will grow from a base of over 697,000 in 2004 to over 868,000 in 2014. Workers in this field can work under many different job titles and in many industries. Occupations in the industry adding the most employees between 2004 and 2014 include bioinformatics specialists (research, development, or application of computational tools and approaches for expanding the use of biological, medical, behavioral or health data, including those to acquire, store, organize, archive, analyze, or visualize such data), computer software engineers, applications; sales representatives, wholesale and manufacturing, except technical and scientific products; accountants and auditors; and computer software engineers. Educational requirements range from a high school diploma to a doctoral degree. The top skills these occupations share include:

- Active Learning
- Active Listening
- Coordination
- Critical Thinking
- Judgment and Decision Making
- Monitoring
- Reading Comprehension
- Social Perceptiveness
- Speaking
- Time Management
- Writing

Construction

Projections of employment in California for the top 20 construction occupations with the largest growth indicate a gain of more than 119,000 jobs from 2004 through 2014. The top ten of these occupations account for

more than 76 percent of this growth. Carpenters; first-line supervisors/managers of construction trades and extraction workers; electricians; plumbers, pipe fitters and steamfitters; construction laborers; and cement masons and concrete finishers; and painters, construction and maintenance, are some of the occupations with the most projected growth. Educational requirements vary among the construction occupations. Many do not even require a high school diploma. Others, such as various supervisors and managers, require a bachelor's degree. Required skills for these jobs can be wide-ranging and, in some instances high-level, such as:

- Coordination
- Critical Thinking
- Judgment and Decision Making
- Reading Comprehension
- Speaking
- Time Management

Over 31 percent of the construction jobs in the top growth occupations (construction laborers; cement masons and concrete finishers; painters – construction and maintenance; and dry wall and ceiling tile installers) require skills encompassing:

- Active Learning
- Active Listening
- Equipment Selection
- Installation
- Mathematics

Financial Services

Financial services workers are employed in occupations that cut across a wide range of industries. In California, employment in the 20 largest growth financial services occupations is expected to increase by more than 62,000 workers between 2004 and 2014. These occupations include customer service representatives; tellers; insurance sales agents; claim adjusters, examiners, and investigators; loan officers; securities, commodities, and financial services sales agents; and insurance claims and policy processing clerks. Financial managers, financial analysts, and personal financial advisors will also experience growth during this time.

Educational requirements vary widely among the financial services occupations with the largest employment. Financial managers, financial analysts, and eight other occupations require a bachelor's degree. Customer service representatives, tellers, insurance claims and policy processing clerks and five other occupations require various levels of on-the-job training (OJT). Financial jobs require workers to have high skill levels in:

- Active Learning
- Active Listening

- Critical Thinking
- Judgment and Decision Making
- Mathematics
- Reading Comprehension
- Service Orientation
- Speaking
- Time Management
- Writing

Health Care

In California, employment in the top 20 high-growth occupations in the health care industry is expected to increase by more than 194,000 between 2004 and 2014. The projected demand and largest growth in health care careers will be RNs; nursing aides; orderlies, and attendants; home health aides; medical assistants; and dental assistants. Employment in these top five occupations is expected to grow by 124,000 workers. Educational requirements vary widely among the health care occupations. RNs require a bachelor's or associate degree. Nursing aides and home health aides may require a high school diploma or General Equivalency Diploma (GED) certificate and vocational or job-related course work to obtain State certification. Health Care occupations require workers to have high skills in:

- Active Learning
- Active Listening
- Critical Thinking
- Instructing
- Learning Strategies
- Reading Comprehension
- Social Perceptiveness
- Speaking
- Time Management
- Writing

Hospitality Industry (Accommodation and Food Services)

The top 20 high-growth occupations in the hospitality industry are expected to grow by more than 201,000 between 2004 and 2014. The largest growth occupations in the hospitality industry are: waiters and waitresses, combined food preparation and serving workers, food preparation workers, fast-food cooks, and restaurant cooks. These top five occupations are expected to grow by 118,000 workers. The many part-time, low-wage, and low-skilled occupations in the hospitality industry drive high turnover creating additional employment opportunities. Employers are challenged to continuously recruit employees with the skills most essential to the largest growth hospitality industry occupations. The top ten skills are:

- Active Listening

- Coordination
- Critical Thinking
- Instructing
- Mathematics
- Reading Comprehension
- Service Orientation
- Social Perceptiveness
- Speaking
- Time Management

Communication is a core skill needed by hospitality industry workers. Employers report that English-speaking applicants are particularly difficult to find.

Information Technology/Geospatial

The Information Technology Association of America states that 92 percent of Information Technology (IT) workers are now employed in industries outside of IT. Most of the twelve high-growth IT occupations identified require a bachelor's degree or higher—only computer support specialists and related specialists such as those who work in computer labs require an associate degree. One emerging professional occupation within this field is computer and information research scientists, which require a doctorate degree. Information technology jobs require workers to have high levels of basic skills that will allow them to quickly acquire and use new information. These skills include:

- Active Learning
- Active Listening
- Complex Problem Solving
- Critical Thinking
- Reading Comprehension

Other important skills shared by IT workers in high-demand occupations include:

- Judgment and Decision Making
- Time Management
- Troubleshooting

Geospatial

Geospatial workers are employed in occupations that used across a wide range of other industries. These include computer software engineers, systems software and applications; database administrators; electrical and electrical engineering technicians; industrial, electrical, mechanical, environmental, and aerospace engineers; industrial engineering technicians, and civil engineering technicians. Of the 21 high-growth occupations identified as geospatial more than half require a bachelor's degree or higher, with the bulk of the remaining

occupations needing associate degrees or post-secondary vocational education. Geospatial occupations require many of the same basic skills:

- Active Learning
- Active Listening
- Complex Problem Solving
- Coordination
- Critical Thinking
- Judgment and Decision Making
- Mathematics
- Reading Comprehension
- Speaking
- Time Management

Additionally, the technical skills most important in the Geospatial sector are:

- Troubleshooting
- Equipment Selection
- Technology Design

Manufacturing

Of the 20 manufacturing occupations with the largest employment growth, over half require less than an associate degree, with most requiring on-the-job training or work experience. Forty percent of the high-growth occupations require a bachelor's degree or higher, and one requires an associate degree. Regardless of training level, all of these identified occupations share essential skill requirements:

- Active Learning
- Active Listening
- Critical Thinking
- Mathematics
- Reading Comprehension
- Speaking
- Time Management

Professional workers in the manufacturing industry also require additional core skills such as:

- Judgment and Decision Making
- Complex Problem Solving

Technician and production workers in the manufacturing industry share discrete skill requirements such as:

- Equipment Maintenance
- Equipment Selection
- Monitoring

Retail

Employment of the top 20 high-growth occupations in California's retail trade industry is expected to grow by more than 221,000 between 2004 and 2014. The projected demand in retail careers will be for retail salespersons; cashiers; first-line supervisors/managers of retail sales workers; automotive service technicians and mechanics; and packers and packagers, hand. These five occupations alone account for an increase of approximately 162,000 workers (73 percent of the top 20 high-growth occupations). Educational requirements vary widely among the retail occupations. Some retail manager positions require a bachelor's degree. Automotive service technicians and mechanics may require specialized, vocational or apprenticeship training for certification. Retail salespersons and cashiering jobs generally require a high school diploma or GED certificate. Retail occupations are very diverse and require workers with high skill levels in:

- Active Learning
- Active Listening
- Critical Thinking
- Instructing
- Mathematics
- Reading Comprehension
- Service Orientation
- Social Perceptiveness
- Speaking
- Time Management

Transportation

Employment in California for the 20 transportation occupations with the largest growth is forecast to gain over 50,000 workers from 2004 through 2014. The top ten of these occupations will account for more than 40,000 workers. Four of these occupations—truck drivers, heavy and tractor-trailer; truck drivers, light and delivery services; laborers and freight, stock, and material movers, hand; and industrial truck and tractor operators—will be responsible for an increase of about 29,000 workers. The occupations with the most growth during the projection period also include shipping, receiving and traffic Clerks; general and operations managers; aircraft mechanics and service technicians; packers and packagers, hand; customer service representatives; and bus and truck mechanics and diesel engine specialists.

Educational requirements vary among these transportation occupations. General and operations managers and airline pilots; copilots; and flight Engineers require a bachelor's degree. Truck drivers, light or delivery services; industrial and tractor operators; bus drivers, school; and 10 other occupations require various levels of OJT. Required skills for these jobs can be wide-ranging and, in some instances, mid-to-high-level, such as:

- Active Listening
- Coordination

- Critical Thinking
- Reading Comprehension
- Social Perceptiveness
- Speaking
- Time Management

Overall Skills Needs

Despite the range of jobs identified in each industry, and the range of skills needed for the differing jobs, it is interesting to note that certain skills are commonly required across industries:

- Active Listening
- Coordination
- Critical Thinking
- Judgment and Decision-Making
- Mathematics
- Reading Comprehension
- Speaking
- Time Management

More broadly, the full range of skills required across industries is consistent with the still applicable workplace competencies and foundation skills identified in 1992 by the Secretary's Commission on Achieving Necessary Skills (SCANS) report, *Learning a Living: A Blueprint for High Performance; A SCANS Report for America 2000.* The SCANS Report identified five workplace competencies and three basic foundation skills and personal qualities that are needed for job performance.

Workplace Competencies

Effective workers can productively use:

- ✓ **Resources –** they know how to allocate time, money, materials, space, and staff.
- ✓ **Interpersonal Skills –** they can work on teams, teach others, serve customers, lead, negotiate and work well with people for culturally diverse backgrounds.
- ✓ **Information –** they can acquire and evaluate data, organize and maintain files, interpret and communicate, and use computers to process information.
- ✓ **Systems-** they understand social, organizational, and technological systems; they can monitor and correct performance and they can design or improve systems.
- ✓ **Technology-** they can select equipment and tools, apply technology to specific tasks, and maintain and troubleshoot equipment.

Foundation Skills
Competent workers in the high-performance workplace need:

- ✓ **Basic Skills-** reading, writing, arithmetic and mathematics, speaking and listening.
- ✓ **Thinking Skills –** the ability to learn, to reason, to think creatively, to make decisions, and solve problems.
- ✓ **Personal Qualities –** individual responsibility, self-esteem, and self-management, sociability and integrity.

The skills and skill needs of the workforce identified by the SCANS report were validated recently, and found "poorly lacking." A detailed survey of 431 human resources officials conducted in April and May 2006 by the Conference Board examined both academic and more advanced "applied' skills. The survey was to examine employers' views on the readiness of new entrants into the workforce, including recently hired high school graduates, two-year colleges or technical schools, and four-year colleges. Nearly three-quarters of survey participants (70 percent) cited deficiencies among incoming high school graduates in "applied" skills, such as professionalism and work ethic, defined as "demonstrating personal accountability, effective work habits, e.g. punctuality, working productively with others, time and workload management."*

Source: California Labor Market and Economic Analysis 2007 (Labor Market Information Division- EDD; *http://www.conference-board.org/utilities/pressDetail.cfm?press_ID=2971

Forces Changing Our Nation's Future

- Inadequate literacy and numeracy skills among large segments of our student and adult population
- An ongoing shift in the demographic profile of our population, powered by the highest immigration rates in nearly a century
- The continuing evolution of the economy and the nation's job structure, requiring higher levels of skills from an increasing proportion of workers
- Half of America's adults lack literacy skills needed for the 21st century
- Jobs requiring high levels of education and skills are projected to account for almost half of the job growth over the next decade
- Average literacy scores are expected to decline between 1992 and 2030, with an increase in the amount of inequality

Source: America's Perfect Storm, Irwin S. Kirsch, ETS

Not Even the Basics
Business leaders report that while the three "Rs" (reading, writing, and arithmetic) are still fundamental to every employee's ability to do the job, applied

skills such as teamwork, critical thinking, and communication are essential for success at work. In fact, at all educational levels, these applied skills trump basic knowledge skills such as reading and mathematics in importance in the view of employers. In order to succeed in the workplace in the 21st Century, high school and college graduates need to master basic academic skills as well as a complement of applied skills. The survey also found that too many new entrants to the workforce are not adequately prepared in these important skills.

Nearly three-quarters of survey participants (70 percent) cite deficiencies among incoming high school graduates in "applied" skills, such as professionalism and work ethic, defined as "demonstrating personal accountability, effective work habits, e.g. punctuality, working productively with others, time and workload management."

More than 40 percent of surveyed employers said incoming high school graduates hired are deficiently prepared for the entry-level jobs they fill. The report found that recent high school graduates lack the basic skills in reading comprehension, writing and math, which many respondents said were needed for successful job performance.

Furthermore, when asked how their hiring practices will change:

- 28 percent of employers project that their companies will reduce hiring of new entrants with only a high school diploma over the next five years.
- 49.5 percent said that the percentages of two-year college graduates they hire would increase.
- Almost 60 percent said their hires of four-year college graduates would increase.
- 42 percent said their hires of post-graduates would increase over the next five years.
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"This study should serve as an alert to educators, policy makers, and those concerned with U.S. economic competitiveness that we may be facing a skill shortage," said Susan R. Meisinger, President and CEO of the Society for Human Resource Management. "In a knowledge-based economy a talented workforce with communication and critical thinking skills is necessary for organizations and the U.S. to be successful."

Writing Singled Out

The findings show an especially big gap in writing skills. Nearly three-quarters (72 percent) of incoming high school graduates are viewed as deficient in basic English writing skills, including grammar and spelling. When asked about readiness with regard to applied skills related to the workplace, the greatest deficiency was reported in written communications (memos, letters, complex technical reports), and in professionalism and work ethic. Eighty-one percent of survey participants said their high school graduate hires were deficient in written communications.

Poor writing skills also continued to be a problem among both two-year and four-year college graduates. Nearly half of all survey participants (47 percent) report that two-year graduates are deficient in this skill.
"The basics plus an array of applied and social skills – from critical thinking to collaboration to communications – defines workforce readiness in the 21st Century," said Ken Kay, President of the Partnership for the 21st Century Skills. For example, over half (58 percent) of responding employers said that critical thinking and problem solving skills were "very important" for incoming high school graduates' successful job performance, yet nearly three-quarters of respondents (70 percent) rated recently hired high school graduates as deficient in critical thinking.

Future Workplace
Looking toward the future, nearly three-fourths of the survey participants ranked "creativity/innovation" as among the top five applied skills projected to increase in importance for future graduates.
In addition, knowledge of foreign languages, cultures, and global markets will become increasingly important for future graduates entering the U.S. workforce. When asked to project the changing importance of several knowledge and skill needs over the next five years, 63 percent of survey participants cited foreign languages as increasing in importance more than any other basic knowledge area or skill. And, in separate questions about emerging content areas, half of the respondents noted the use of "non-English languages as a tool for understanding other nations, markets, and cultures," while 53 percent selected "understanding of global markets and the economic and cultural impacts of globalization."

Source: *Most Young People Entering the U.S. Workforce Lack Critical Skills Essential for Success,* The Conference Board; Corporate Voices for Working Families; the Partnership for the 21st Century Skills; Society for Human Resources Management, 2006

NEEDS OF THE WORKPLACE
Basic Skills/Workplace Competencies include:

- Prose
- Document
- Quantitative Literacy
- Communicating Effectively in English
- Learning, Understanding, and applying Information
- Analysis
- Thinking Critically
- Acting Logically to Solve Problems
- Using Technology, Tools and Information Systems
- Working in Teams

- Developing a Positive Attitude Toward Change
- Willingness and Ability to Learn for Life

THE NEW BASIC SKILLS GO FAR BEYOND THE BASICS!

- Science Literacy vs. General Literacy
- Math Literacy vs. Arithmetic Literacy
- Advanced Computer Literacy vs. No Computer Literacy
- Specialized Technical English Literacy vs. Basis Use of Conversational English
- Technical Report Preparation and Interpretation vs. No Writing and Analysis
- Capacity to Form and Work in Mixed Groups with Varying Technical Capabilities to Innovate and Solve Problems vs. Individual Job Responsibility
- Ability to Engage In Continuous Just-In-Time Life-Long Learning of New and Different Advanced Competencies vs. One-Time Learning of Advanced Competencies

SURVEY CONDUCTED, MARCH, 2007 –ORANGE COUNTY ENTERPRISE AND EMPOWERMENT ZONE EMPLOYERS' WORKPLACE CONCERNS:

- Finding qualified labor
- Lack of skills for entry-level positions
- Skill levels of those applying for jobs
- Basic supervisory skills
- Time management
- Basic math and English skills
- Trouble-shooting skills
- Quality assurance skills
- Technical training
- Hands-on training

Source: R.S.C.C.D. WorkPlace Learning Resource Center

COMMUNITY COLLEGE FACULTY VOICE CONCERNS

In an informal e-mail survey, conducted by the R.S.C.C.D. WorkPlace Learning Resource Center, in the fall semester of 2007, faculty members of the Rancho Santiago Community College District (Santiago Canyon College and Santa Ana College) were asked to respond to the question: "What basic skills deficiencies have you experienced with your students that would be a hindrance for them in the workplace?"

The following were the responses of the 28 faculty respondents:

- Inability to brainstorm
- Inability to listen to a request and form a unique, creative communication solution

- Reading
- Writing
- Speaking clearly
- Punctuality
- Meeting deadlines
- Listening (to instructions) and acting safely on what they have heard
- Academic literacy
- Work ethics
- Time management
- Prioritization
- Spelling
- Following directions
- Cultural, e.g. eye contact; shaking hands
- Cultural/family disconnect
- Explaining and discussing results/answers
- Basic math skills
- Fundamental science knowledge
- Lack of learning desire
- Language barriers (ESL)
- Research skills
- Lack of tenacity
- Willingness/learning to ask questions
- Note taking
- Grammar
- Annunciation
- Procrastination
- Voicing opinions
- Respect
- Adaptability
- Conflict resolution
- Lack of enthusiasm
- Chronic complaining
- Appropriate attire
- Appropriate speaking volume
- Concentration; failure to focus
- Problem solving
- Critical thinking
- Understanding/following rules
- Appropriate vocabulary
- Lack of sensitivity
- Lack of business skills

SURVEY FINDS AMERICANS CONCERNED YOUNG PEOPLE ARE NOT ADEQUATELY PREPARED FOR 21ST CENTURY SUCCESS

Respondents Strongly Favor Increased Emphasis on "Basics Plus" Approach to Education, Even in Light of Other Education Priorities.

AOL Time Warner announced on June 25, 2003, the release of a survey conducted by its Foundation demonstrating that Americans overwhelmingly believe today's students need to be taught an array of "21st Century Literacy" skills beyond reading, writing, and math to be successful in an information century.

Survey Shows Strong Commitment to Broad Literacy Skills

The national opinion survey found:

- 92% of respondents think that young people need different skills today than they did 10-20 years ago.
- 91% said it is "very" or "somewhat" important to "prepare young people with 21st Century Literacy skills."
- 90% think this is an important issue, even "given the current challenges that face the education system."
- 70% favor a "basics plus" education over a "back to basics" approach for young people.
- While almost 70% of Americans generally believe schools are preparing young people for life after graduation, only 19% think they are being prepared "very well."
- Only 42% think schools are doing a good job teaching young people the 21st Century literacy skills they need.
- 63% believe that it is "realistic to expect schools to integrate these new literacy skills into learning even when so many young people don't have adequate basic skills."
- Only 19% think American young people are better prepared for the 21st Century than youth in other developed countries.
- 74% think young people are learning basic skills.
- 60% think young people are being taught to use technology effectively.
- Only 48% believe young people are learning communication skills.
- 37% think young people are getting critical thinking and decision-making skills.
- 28% young people are learning how to make a difference in their community.
- 94% favor "supporting programs that make 21st Century Literacy a vital component in learning."
- 64% said it would be effective to make these skills "part of the core curriculum taught in schools."

- 89% agree that there "should be some type of organized activity or place for young people to go after school that provides opportunities for them to learn."
- 59% felt that "access to high quality after-school and summer programs that include these skills" would effective in getting skills to young people.

Source: Survey conducted by national research firms Lake, Snell, Perry and Associates and Market Strategies; Partnership for 21st Century Skills (2007)

WRITING: A TICKET TO WORK...OR A TICKET OUT-- A SURVEY OF BUSINESS LEADERS

A survey of 120 major American corporations employing nearly eight million people concludes that in today's workplace writing is a "threshold skill" for hiring and promotion among salaried (i.e., professional) employees. Survey results indicate that writing is a ticket to professional opportunity, while poorly written applications are a figurative kiss of death. Estimates based on the survey returns reveal that employers spend billions annually correcting writing deficiencies. The survey mailed to 120 human resource directors in corporations associated with the Business Roundtable (an association of the chief executive officers of some of the leading U.S. corporations), produced responses from 64 companies, a 53.3 response rate.

Among the survey findings:

- Writing is a "threshold skill" for both employment and promotion, particularly for salaried employees. Half of the responding companies report that they take writing into consideration when hiring professional employees. "In most cases, writing ability could be your ticket in...or it could be your ticket out," said one respondent.
- People who cannot write and communicate clearly will not be hired and are unlikely to last long enough to be considered for promotion. "Poorly written application materials would be extremely prejudicial," said one respondent. "Such applicants would not be considered for any position."
- Two-thirds of salaried employees in large American companies have some writing responsibility. "All employees must have writing ability...Manufacturing documentation, operating procedures, reporting problems, lab safety, waste-disposal operations—all have to be crystal clear," said one human resources director.
- Eighty percent or more of the companies in the service and finance, insurance, and real estate (FIRE) sectors, the corporations with the greatest employment-growth potential, assess writing during hiring. "Applicants who provide poorly written letters wouldn't likely get an interview," commented one insurance executive.

- A similar dynamic as at work during promotions. Half of all companies take writing into account when making promotion decisions. One succinct comment: "You can't move up without writing skills."
- More than half of all responding companies report that they "frequently" or "almost always" produce technical reports (59 percent), formal reports (62 percent), and memos and correspondence (70 percent). Communication through e-mail and PowerPoint presentations is almost universal. "Because of e-mail, more employees have to write more often. Also, a lot more has to be documented," said one respondent.
- More than 40 percent of responding firms offer or require training for salaried employees with writing deficiencies. Based on the survey responses, it appears that remedying deficiencies in writing may cost American firms as much as $3.1 billion annually. "We're likely to send out 200-300 people annually for skills-upgrade courses like 'business writing' or 'technical writing,'" said one respondent.

Source: College Board, The National Commission on Writing, September 2004

2005 SKILLS GAP REPORT – A SURVEY OF THE AMERICAN MANUFACTURING WORKFORCE

In spring 2005, the National Association of Manufacturers' Manufacturing Institute/Center for Workforce Success and Deloitte Consulting LLP (Deloitte Consulting) developed the fourth iteration in a series of surveys designed to learn more about how manufacturers plan their human capital strategies and the barriers they encounter in the process.
The results of this survey confirm the skill shortages found in earlier reports. However, the 2005 report goes much beyond earlier findings in detailing the breadth and depth of the skill shortage, the negative impact of the shortages on business operations, and the extraordinary increase in employee performance requirements.

The picture that emerges is both more complex and more disturbing than in the past, because it exposes a broadening gap between the availability of skilled workers and the employee performance requirements of modern manufacturing. Specifically, the research found:

- Today's skill shortages are extremely broad and deep, cutting across industry sectors and impacting more than 80 percent of companies surveyed.
- Skills shortages are having a widespread impact on manufacturers' abilities to achieve production levels, increase productivity, and meet customer demands.

- High-performance workforce requirements have significantly increased as a result of the skills gap shortage and the challenge of competing in a global economy, according to nearly 75 percent of survey respondents.

In sum, the confluence of the above trends and the increasingly competitive global environment has created an extraordinary gap between the supply of skills available and performance requirements of the workforce needed for modern global manufacturing. This human capital performance gap threatens our nation's ability to compete in today's fast-moving and increasingly demanding global economy. It is emerging as our nation's most critical business issue. Clearly, this situation calls for urgent action by both public and private stakeholders. If our country is to remain competitive, the issues of education and training reform now must be given at least as much focus as top business concerns of trade, tax, energy, and regulatory reform.

A Serious, Persistent Shortage

The details behind the talent shortage reveal a stark reality. More than 80 percent of respondents indicated that they are experiencing a shortage of qualified workers overall—with 13 percent reporting severe shortages and 68 percent indicating moderate shortages. Also worrisome is the finding that 90 percent of respondents indicated a moderate to server shortage of qualified skilled production employees, including front-line workers, such as machinists, operators, craft workers, distributors, and technicians. As expected, the research shoed that engineers and scientists are in short supply, with 65 percent of manufacturers reporting deficiencies—18 percent severe and 47 percent moderate.

In addition to shortages of various types of employees, manufacturers surveyed reported they are also dissatisfied with the skills of their current employees. Among respondents, nearly half indicated their current employees have inadequate basic employability skills, such as attendance, timeliness and work ethic, while 46 percent reported inadequate problem-solving skills, and 36 percent indicated insufficient reading, writing, and communication skills.
When asked which types of skills their employees will need more of over the next three years, technical skills was the area most commonly selected (53 percent). Beyond this, there are a number of related skills that will be needed over the next several years that are characteristic of high-performance workforces, such as the ability to work in teams (47 percent), strong computer skills (40 percent), the ability to read and translate diagrams and flow charts (39 percent), and strong supervisory and managerial skills (37 percent).
Basic employability skills (attendance, timeliness, work ethic, etc.) essentially tied with technical skills, which is consistent with the area of greatest deficiency seen in today's workforce. Following that are reading/writing/communication skills,

where 51 percent of the respondents said they will need more of these types of skills over the next three years. This paradoxical mismatch—between the need for the highest skill levels ever and the current need to address basic employability issues and basic skills in general—is particularly vexing given the emphasis companies place on having a high-performance workforce. It also suggests the need for significant change in approaches within the education and public workforce systems.

THE MOST IMPORTANT WORKPLACE SKILLS

Employers responding to NACE's (National Association of Colleges and Employers) Job Outlook 2007 Survey named communication skills and honesty/integrity as a job seeker's most important skills and qualities.

Top Skills/Qualities in Job Candidates

Skills	Rated
Communication skills (verbal and written)	4.7
Honesty/integrity	4.7
Interpersonal skills (relates well to others)	4.5
Motivation/initiative	4.5
Strong work ethic	4.5
Teamwork skills (works well with others)	4.5

(5-point scale, where 1=Not important; 2=Not very important; 3=Somewhat important; 4=Very important; 5=Extremely important)

"Communication skills have topped the list for eight years, and honesty and integrity have tied for the top spot for the last three years," says Marilyn Mackes, NACE Executive Director.

The ideal candidate needs to be more than an articulate straight arrow, according to the survey results. Employers also cited strong interpersonal skills, motivation and initiative, the ability to work well with others, and a strong work ethic as key attributes (each earned a rating of 4.5 or better on a 5-point scale).

Certainly, having the requisite skill set to perform the duties of the job is critical, but much of what employers prize can't be taught in the classroom," says Mackes. "As a result, they look for evidence beyond the grades that the candidate has these Workplace Skills (soft skills) and attributes."

Source: STAFF CONNECTIONS, Volume 6, No. 10, Kennette Reed & Associates.

CONCLUSION

INDIVIDUAL AND SHARED RESPONSIBILITY

The issues associated with the skills gap are numerous and complex. Yet with increased competition from countries around the world, the future success and vibrancy of American industries is now at stake. To hold back further competitive encroachments, all the parties must assume responsibility—industry, the government, educators, and individuals.

Today's educators face a serious dilemma: Communities expect their graduates to be ready to thrive in the Digital Age, but the 21st Century skills such success requires are not well defined. Nor are those skills included in many state learning standards or measured on most state and local assessments.

The current era of high-stakes testing will have a positive impact on students only if we get the metrics right. Without 21st Century skills, students are being prepared to succeed in yesterday's world—not tomorrow's.

Schools must do more to keep pace with rapid technology, research, and societal changes. To ensure that students will be ready to thrive in today's knowledge-based, global society, three significant things need to occur:

- The public must acknowledge 21st Century skills as essential to the education of today's learner
- Schools must embrace new designs for learning based on emerging research about: how people learn, effective uses of technology, and 21st Century skill in the context of rigorous academic content
- Policymakers must base school accountability on assessments that measure both academic achievement and 21st Century skills.

The urgency of this situation also requires the following actions:

- Educators must emphasize science, math and technology-related programs in K-16 curricula, invest more in effective teacher education, and ensure that programs regarding career opportunities and requirements for graduation are geared for 21st Century employment.
- Employees should invest at least three percent of payroll whenever possible to provide training opportunities for their current employees, particularly in areas that will enable them to become a high-performance

workforce, learn new methods to attract, retain and develop and motivate employees.

- State and federal government should invest in the capacity of community and technical colleges to prepare individuals for careers in high-growth industries.
- State education standards should include career education as measurable criteria for K-12 success.
- The Higher Education Act and its funding mechanisms should provide increased access for adult learners.
- Individuals must take responsibility for their own careers and employability by earning industry relevant certifications and formal education credentials such as community college and bachelor degrees.
- The public workforce system, companies, and their business associations must strengthen their engagement in order to better advise Workforce Investment Boards on rising and declining economic conditions, business investments, skill needs and employment requirements.
- Public/private partnerships should be encouraged to support career awareness campaigns that help individuals understand all the career options available to them. A model for this is The Manufacturing Institute's Dream It...Do It manufacturing careers campaign.