What skills do employers want? How do these skills match those that youth and adults are developing through their school and work experiences? How can education and training programs prepare individuals to enter a rapidly changing workplace? These and other questions are examined in this Digest that explores skills currently needed for employment.

Since 1986 the authors of no fewer than six ERIC Digests and one Trends and Issues
Alert have sifted through an increasingly prolific literature base to investigate the evolving topic of employability skills. The dual challenges of competing in a world market and rapid technological advancements have necessitated a redesign of the workplace into an innovative work environment known as the high-performance workplace. This environment requires a behavior and orientation toward work that go beyond step-by-step task performance. It expects workers at all levels to solve problems, create ways to improve the methods they use, and engage effectively with their coworkers (Bailey 1997; Packer 1998).

Knowledge workers who demonstrate this highly skilled, adaptive blend of technical and human relations ability are recognized by employers as their primary competitive edge. Job-specific technical skills in a given field are no longer sufficient as employers scramble to fill an increasing number of interdependent jobs (Askov and Gordon 1999; Murnane and Levy 1996). Many U.S. and international authors point out the importance of continuously developing skills beyond those required for a specific job, and they identify employability skills that enable individuals to prove their value to an organization as the key to job survival. The volume of major studies undertaken in the past 2 decades to identify and describe employability skills underscores their criticality. (For a listing of some of these authors, organizations, and studies, see the references.)

There are many definitions of the phrase employability skills. The following updated definition is representative of a synthesis of definitions as they have evolved over time:

Employability skills are transferable core skill groups that represent essential functional and enabling knowledge, skills, and attitudes required by the 21st century workplace. They are necessary for career success at all levels of employment and for all levels of education.

Two national studies--one by ASTD, the American Society for Training and Development (Carnevale, Gainer, and Meltzer 1990) and one by the Secretary's Commission on Achieving Necessary Skills (SCANS 1991)--are foundational works in identifying employability skills, often used as benchmarks or beginning points for other international, national, state, regional, and local studies. ASTD emphasized 16 skill groups across all job families: (1) Basic Competency Skills--reading, writing, computation; (2) Communication Skills--speaking, listening; (3) Adaptability Skills--problem solving, thinking creatively; (4) Developmental Skills--self-esteem, motivation and goal-setting, career planning; (5) Group Effectiveness Skills--interpersonal skills, teamwork, negotiation; and (6) Influencing Skills--understanding organizational culture, sharing leadership.

The U.S. Department of Labor, which supported the ASTD study through a grant, then established the Secretary's Commission on Achieving Necessary Skills. The commission's task was to investigate not only what is required in the workplace of today and tomorrow, but to determine the extent to which high school students are able to
meet the requirements (O'Neil et al. 1997). The findings highlight 36 skills, including the ability to use 5 competencies efficiently (resources, interpersonal skills, information, systems, and technology) based on a 3-part foundation of basic skills, thinking skills, and personal qualities.

**IMPLICATIONS FOR LEARNING**

SCANS' mission was to define the necessary functional and enabling skills that society must provide to every child by the age of 16 (SCANS 1991). SCANS staff conducted studies of cognitive science research literature related to the importance of learning in context, met with cognitive scientists, and subsequently advocated the teaching of skills within the functional context of the workplace. This represented what the commission termed the most radical change in educational content since the beginning of the 20th century (ibid.). By late 1998 education's challenge was still not being met (Packer 1998). Arnold Packer, former executive director of SCANS and current chairman of the Johns Hopkins University SCANS/2000 Center, identified three misconceptions about SCANS:

1. The assumption that SCANS relates primarily to entry-level employment, when the competencies are needed at all rungs of the career ladder and all levels of education.

2. Thinking that SCANS refers only to "soft skills" such as teamwork and interpersonal skills, when they are only one of five broad competency groups including using technology skills or interpreting information skills.

3. The most controversial misconception that SCANS appears to conflict with rigorous academic work, when the skills are needed as far as the Ph.D. level of the education continuum (Packer 1998). Part of this misconception may have to do with the term "employability skills" itself. Perhaps "career success skills" would more aptly capture the five SCANS competencies' broad scope in the problem-solving domains (Packer 2000).

Despite the misconceptions, recent studies in Nevada and Canada have been successful in validating, updating, and regionalizing generic employability skills and competencies over time ("Employability Skills Toolkit" 2000; Richens 1999).

THE FORGOTTEN HALF REVISITED (Halperin 1998) revealed that a majority of high school students leave school without a solid base of academic and SCANS skills that will enable them to succeed in postsecondary occupational or academic education. Employability skills have not traditionally been "directly taught" in schools (Grubb et al. 1992; Halperin 1998). Teaching and learning these skills are not only consistent with the
emerging needs of a world economy in a high-performance work environment. Teaching and learning employability skills contribute to optimal learning because such a workplace is characterized by five principles that correspond to five principles of effective learning (Bailey 1997, pp. 39-40):

1. Tasks and jobs are integrated through broad job definitions or cross-functional teams. (Knowledge and curriculum are integrated: head and hand, knowing and doing.)

2. Workers are given more initiative and take more responsibility. (Learning is active or engaged, a process of discovery rather than a dissemination of information.)

3. Employees solve problems in nonroutine situations. (Deeper understanding is encouraged. This allows responses to stimuli the learner has not already encountered.)

4. There is an emphasis on continuous improvement. (New approaches to learning focus on thought processes that generate learning rather than the “right answer” and provide multiple opportunities for collaborative learning.)

5. Workers are expected to understand their functions within the context of the broader purposes of the organization. (New strategies are grounded in solid research that calls for learning in context.)

EDUCATIONAL RESPONSES

Contextual integration of employability skills into curriculum has been a slow process, but recent trends are encouraging. The North Central Association on Schools has initiated an optional Transitions Endorsement credentialing model to address one section of its four-part mission: "Provides standards and evaluation services for schools that ensure successful schooling transitions for its students" (www.nca.asu.edu/transitions/). The Transitions Endorsement provides professional development for administrators and teachers to document the performance of every elementary and secondary student in five areas of curricular integration: reading, writing, mathematics, science, employability skills, and career awareness and exploration. A total of 142 pilot schools in 13 states of a 19-state region are working
toward developing individual student rubrics for instructor evaluation of progress in each of the 5 areas. The ultimate goal of credentialing is assuring students, parents/guardians, and the community that students are prepared with the knowledge and skills to be successful as they move from school to school and to their chosen career.

In a similar vein, the Conference Board of Canada revised an earlier list of essential competencies (McLaughlin 1995) and named them Employability Skills 2000+. An interactive Internet version of an Employability Skills Toolkit has been released on the SchoolNet website in September 2000 (www.schoolnet.ca/EmployabilitySkills/). This toolkit will also be released in a series of CD-ROMs targeted for different age groups-K-12, postsecondary, and adult learners ("Employability Skills Toolkit" 2000).

The Johns Hopkins University SCANS/2000 Center is currently implementing a Career Transcript System that uses SCANS research as its foundation in four areas: high school students, community college learners (associate degree/technical institutions), entry-level workers, and incumbent workers in union training programs. A diagnostic assessment of individuals’ employability skills establishes a baseline at entry; a second assessment is task based, using observed behavior in the workplace or in the classroom. These results are entered into an online Career Transcript, and an individual development plan for each student is created to close gaps between current and desired skill levels (Siberts 2000).

O*NET, the Occupational Information Network (www.onetcenter.org), is the Department of Labor’s comprehensive database of worker attributes and job characteristics. Its database, which is the replacement for the Dictionary of Occupational Titles, contains information about employability skills for each job title. Because O*NET data and structure also link related occupational, educational, and labor market information databases to the system, it may be used to align educational and job training curriculum with current workplace needs (Occupational Information Network 2000).

In higher education, Alverno College in Wisconsin and nine universities in the United Kingdom have formed the Ability Based Curriculum Network (www.brookes.ac.uk/services/ocsd/abc int.html). Essential abilities are integrated, developmental, and transferable (Alverno College Faculty 1994). Although learning takes place within a context, what is learned about the underlying ability is transferable to other situations or roles the student encounters (Brown 1999).

Considerably more research is needed on creating and assessing curriculum that integrates the learning of employability skills contextually. Valid and reliable links must be forged between such curriculum and improved learner performance/competency attainment. Equally important, open and free-flowing systems of communication between research outcomes, educational institutions, employers, and communities must be consciously and carefully crafted.
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This project has been funded at least in part with Federal funds from the U.S. Department of Education under Contract No. ED-99-CO-0013. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. Digests may be freely reproduced and are available at http://ericacve.org/fulltext.asp.

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**Title:** Employability Skills: An Update. ERIC Digest No. 220.
**Document Type:** Information Analyses---ERIC Information Analysis Products (IAPs) (071); Information Analyses---ERIC Digests (Selected) in Full Text (073);
**Available From:** For full text: http://www.ericacve.org/fulltext.asp.

**Identifiers:** American Society for Training and Development, Canada, ERIC Digests, Secretarys Comm on Achieving Necessary Skills, United Kingdom, United States

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