

MAJOR TRENDS FACING NORTH CAROLINA

IMPLICATIONS FOR OUR STATE AND THE UNIVERSITY OF NORTH CAROLINA



Workforce Readiness and Global Competitiveness
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Introduction

Workforce readiness implies mastery of basic skills such as English language, reading comprehension, writing skills, mathematics, foreign languages and social studies, and applied skills such as critical thinking and problem solving, oral communication, teamwork, diversity, information technology, leadership, creativity/innovation, life-long learning/self direction, professionalism/work ethic and ethics/social responsibility. Workforce readiness skills are developed through public education at the high school level; community college degrees, certificates and licenses; university undergraduate degrees, and a variety of corporate training and other workforce training programs. The state of workforce readiness in North Carolina and the United States is cause for considerable concern:

1. According to the U.S. Department of Labor, about 60 percent of available jobs require skills possessed by only 20 percent of the workforce.
1. A survey of human resource professionals (Casner-Lotto & Barrington, 2006) found that too many young people are inadequately prepared to be successful in the workforce. Well over 50 percent lack the most important skills—oral and written communication, professionalism/work ethic, and critical thinking/problem solving. Though college graduates are better prepared, only 25 percent are perceived to be excellent in these skills.
1. Between 2000 and 2015, about 85 percent of newly created U.S. jobs will require education beyond high school (Gunderson, Jones, & Scanland, 2005).
1. The National Association of Manufacturers (2005) noted that U.S. manufacturing firms will no longer have millions of low-skilled jobs. Tomorrow's jobs require education in science, engineering and mathematics and will go to highly skilled technical workers.
1. The ACT National Curriculum Survey 2005-2006 (2007) draws attention to the gap between what U.S. high schools perceive to be appropriate preparation for students and what colleges expect of incoming first-year students. The survey found their perceptions to be dramatically different in such key areas as English and writing, reading, mathematics, and science. In the fall 2000, 28 percent of college freshmen needed a remedial course in reading, writing or mathematics (NCES, 2004).

- 1.
1. A preliminary survey done by the Institute for Emerging Issues (2007) among some North Carolina Businesses found that 75% reported that the skills of newly hired employees matched the degrees they earned, but 55 percent indicated that additional on-the-job training was needed because of under-prepared entry-level employees.
1. The baby-boom generation is beginning to retire, taking their skills with them. As this retirement continues over the next 15 to 20 years, it will be difficult to produce enough postsecondary education graduates to meet the workforce needs of the economy. It is estimated that shortages of workers with college-level skills will increase to over 14 million by 2020 (Appendix B).

When placed in the context of the global community, our workforce readiness causes even greater concern. Consider the following:

1. Sixty-three percent of employers interviewed agreed that most college graduates do not possess the skills needed to succeed in the global economy. In fact, 90 percent think colleges and universities in the U.S. need to improve the quality of student achievement to ensure global competitiveness for the United States. Only 39 percent of the college graduates felt their college education prepared them extremely or very well for success in today's global economy (Peter D. Hart Research Associates, Inc., 2006).
1. In 1995, U.S. employers invested approximately \$55.5 billion dollars on employee training. High technology organizations spent about \$1000 while customer service organizations spent about \$160 per employee. Yet, Goetz (1996) described the investment of U.S. firms in advanced worker training as 'notoriously little' relative to other industrialized countries.
1. Only 7 percent of American 4th graders and 8th graders achieved "advanced level on the most recent *Trends in International Mathematics and Science—TIMSS, 2003*—test, compared to their counterparts in Singapore who had 38 percent and 44 percent respectively. Eleven countries out-performed the United States on the 4th grade test and five out-performed us on the 8th grade test. These countries include Singapore, Japan, China and England (Ministry of Education, 2004).

More than half the undergraduate degrees awarded in China are in the fields of science, technology, engineering and math, compared to 16 percent of those offered in the United States. This is consistent with the view of Gershwin (2005) that the U.S. workforce does not compare well with its international counterparts. Jobs requiring college-level education

are quickly outpacing the supply of workers with bachelor's degrees and this will undermine the global competitiveness of the U.S. workforce. See Appendix C.

1. About 33 percent of North Carolina's young adults (18-24 years old) are currently enrolled in college. This compares well with many countries, but it is only 69 percent of the rate in Korea, and is also surpassed by Greece, Finland, Belgium, Ireland and Poland (Appendix D). Our performance is even lower for degrees/certificates awarded per 100 students enrolled in higher education in 2004 (Appendix E).
1. While the United States is among the top nations in the proportion of older adults (25-64 years old) holding college degrees, it is 7th in younger adults (25-34 years old) with similar qualifications (Appendix F). This trend is the reverse of what is most desirable.

Both graduates and their employers believed that college graduates should have a good balance of technical knowledge and a well-rounded education that includes teamwork skills, critical thinking and analytical reasoning, and communication skills. Other critical skills include the ability to assemble/organize information, engage in innovative/creative thinking, work with numbers/statistics, and foreign language skills (Peter D. Hart Research Associates, Inc, 2006).

Major Trends Impacting North Carolina

Several economic and social trends are impacting our state, for example:

1. The Hudson Institute publication *Workforce 2020* notes that the workforce will require highly educated workers who can create and use sophisticated technologies. Low skilled jobs that can be done by any worker will continue to leave the United States. We have already experienced this in our textiles and furniture industries, for example.
1. The mismatch between worker skills and employer demands will result in a shortage of workers with post-secondary degrees that could exceed 14 million by the year 2020.
1. The cost of higher education in North Carolina continues to rise faster than the national average.
1. The National Center for Public Policy and Higher Education (2006) *North Carolina Measuring Up* report card stated that the chance of a North Carolina high school graduate enrolling in college by age 19 is only fair.

1. If the current trends are allowed to persist, the year 2020 will see a workforce that is less educated than today's. Kelly (2005) projects an additional seven million 25-64 year-olds with less than a high school education would have joined the workforce.

Potential Impact of the Trends on North Carolina

The under-preparedness of the workforce will undoubtedly affect the North Carolina economy and its ability to compete in the global environment. For example:

1. Based on current trends, by 2012 more than 40 percent of manufacturing jobs will require postsecondary education, but nearly 50 percent of high school graduates do not have basic competence in mathematics (National Association of Manufacturers, 2005). This is likely to result in an undersupply of qualified workers while there is a rise in the unemployment rate, causing a drain on the economy.
1. The National Center for Public Policy and Higher Education (2006) *North Carolina Measuring Up* report card stated that the chance of a North Carolina high school graduate enrolling in college by age 19 is only fair. This will increase the numbers of under-prepared workers at a time when the need for highly skilled workers is increasing.
1. The rising cost of higher education is making it more difficult to earn degrees, certificates, and licenses at a time when more and more jobs require highly skilled workers. This will only broaden the gap between the desired workforce and the available workforce.
1. Young people entering the workforce of the 21st century lack a global perspective. And as Wynn (2002) noted, the future workforce will either compete with Germany, Japan and South Korea or be forced to compete with Jamaica, Mexico and Vietnam.
1. Continuing decline in the number of 9th graders who enroll in college by age 19 also threatens to lower the cadre of highly qualified workers in the state.

Issues Demanding Attention and Responses from the University of North Carolina System

The first bulwark in the face of rapidly changing economies and job markets is the flexibility and adaptability of the labor force. This adaptability begins with the formal educational system, especially the public schools (Bernanke, 2005).

North Carolina and the UNC System need to be proactive in their responses to current workforce preparedness trends. Appropriate actions might include:

- 1.
1. The percentage of high school students who take upper-level math courses is good, but needs to continue to grow. Currently, North Carolina is one of the top-performing states in terms of the percentage of high school students who take upper-level math courses, with the percentages growing over the last 12 years. But, at approximately 72%, there is still room for improvement.
1. The chance of a North Carolina high school graduate enrolling in college by age 19 has increased by 13 percent from 1992 to 2006, in contrast to a nationwide decline of 2 percent. However, there is need for a much faster growth rate, especially when one considers that the downward trend in the number of high school students who graduate in four years and enroll in colleges and the fact that by 2012 more than 40 percent of manufacturing jobs will require postsecondary education.
1. The State and the University System must work together to ensure that graduating high school seniors are actually prepared for college. It requires more than a listing of the courses that are needed for college admission. It requires working together to align curricula. Teachers and professors need to agree on what constitutes adequate and what constitutes excellent preparation for college.
1. The National Leadership Council for Liberal Education makes a very strong point, that the commitment to expanded college access must be coupled with an equally strong commitment to educational excellence. The focus of schooling needs to shift from accumulating course credits to building strong real-world capabilities.
1. Affordability of higher education is another area that needs immediate attention. North Carolina received an "F" for affordability on the *2006 National Report Card on Higher Education* (The National Center for Public Policy and Higher Education, 2006). Getting more 9th graders in four-year colleges and universities also means making it affordable for them.
1. The soft-skills gap needs to be addressed by the education system as employers report that it is easier for them to train entry-level workers on hard skills than on soft skills. Necessary soft skills include global awareness, team-building, critical thinking/decision making, and communication skills (Institute of Emerging Issues' Business Committee on Higher Education, 2007).

The State Board of Education recently approved a new requirement that high school students pass four math courses starting in the 2009-10, up from three. ~~Global Competency Standards Initiative~~

. The goal is to make high school

graduates more globally competitive for work and for higher education (The Public School Forum's Friday Report, 2007). This initiative has the potential to greatly increase the global competitiveness of the workforce and should receive strong support from the state and its higher education institutions.

1. While employers recognize that colleges and universities play a significant role in economic success, they believe improvements are needed in the level of preparation of current college graduates (Appendix G). For example, 73 percent of employers think colleges and universities play an important role in ensuring the nation's ability to compete in the global economy. Traditionally, community colleges have placed more emphasis on meeting specific workforce needs than has the University System. Maybe it is time for this to change.
1. It is very important that the University System learns from its graduates and their employers as it works to improve its mission and image in the community. Drawing from the results of a national survey by Peter D. Hart Research Associate, Inc. (2006), Appendices H and I list some areas that are most important to employers and recent graduates and areas in which recent college graduates think their colleges should place more emphasis. What would a similar survey in the UNC system tell us? Being responsive requires that we first learn the needs of our customers/clients.
1. Strengthening our schools is important, but the pace of change in the modern economy means that job training and the acquisition of skills must be a lifetime endeavor. To participate fully in the modern economy, some people may need to acquire new skills in their forties, fifties, or beyond. The Federal Reserve Bank Chairman, wonders how we can help make these opportunities available (Bernanke, 2005). Currently, continuing workforce development skills are largely provided by the community colleges, social programs, and corporate training. It might be time for the University System to play a more active role.

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Appendices

The graphs, charts and table in Appendices B to I were not designed specifically for this paper, but were drawn from several documents that are available online. They should not be used in any published materials without properly citing the sources and receiving permission from the authors/owners of the copyrights.

Other Related Literature

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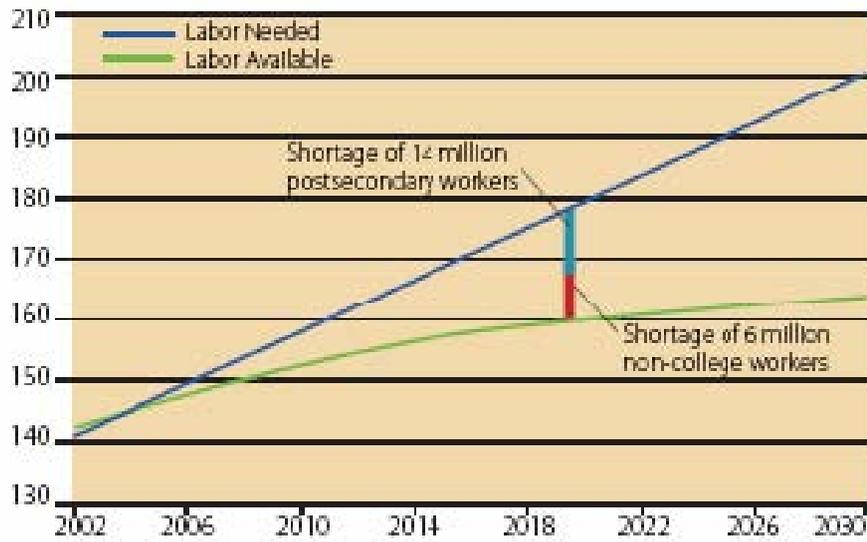
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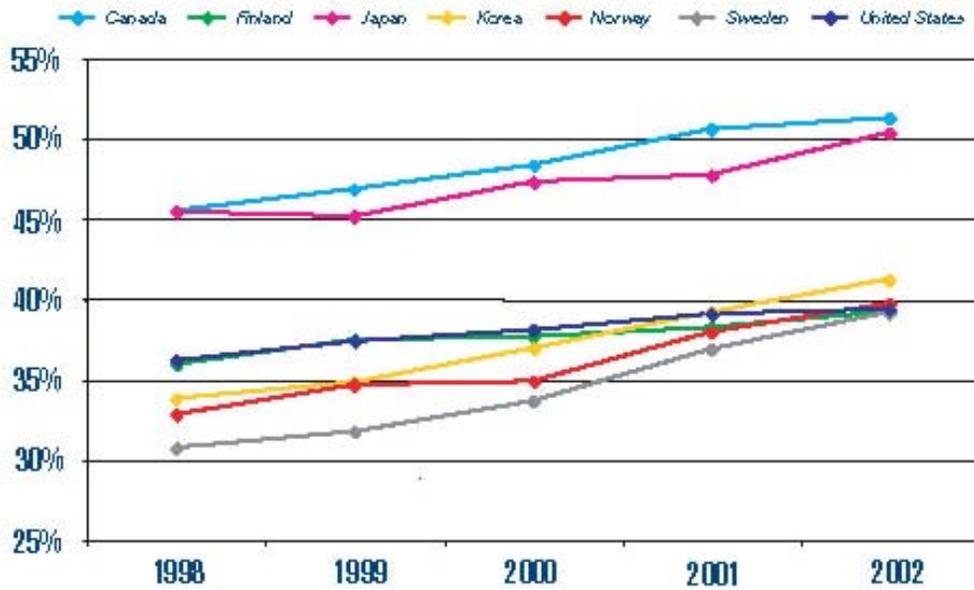
Labor Demand and Supply

Expected Labor Force (in millions) and Labor Force Demand (2002-2030)



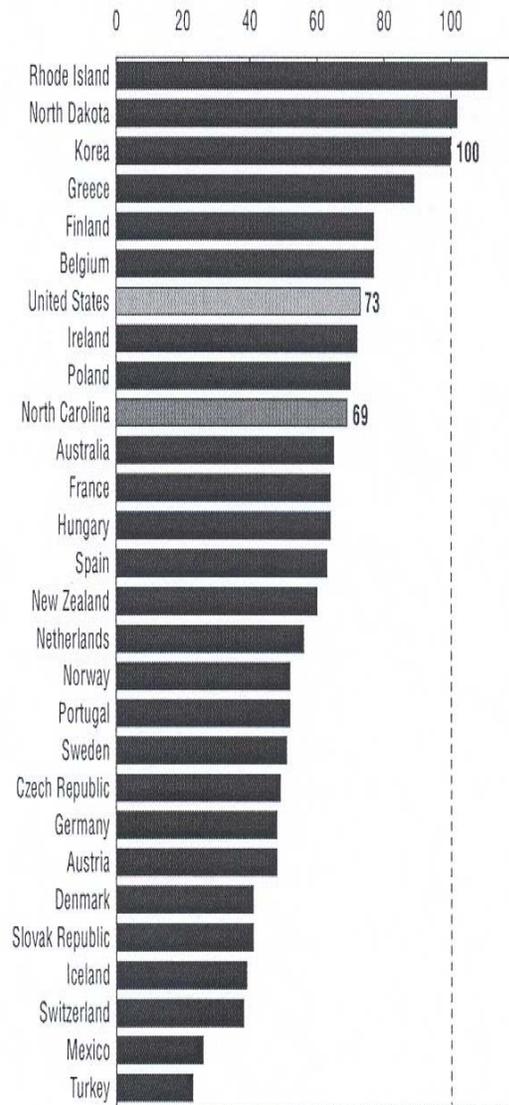
Source: Adapted from *Employment Policy Foundation*, 2001.

Trends in Educational Attainment of U.S. Population Relative to the Most Educated Countries—Percent of the Young Workforce (25-34 Year Olds) with an Associate Degree or Higher



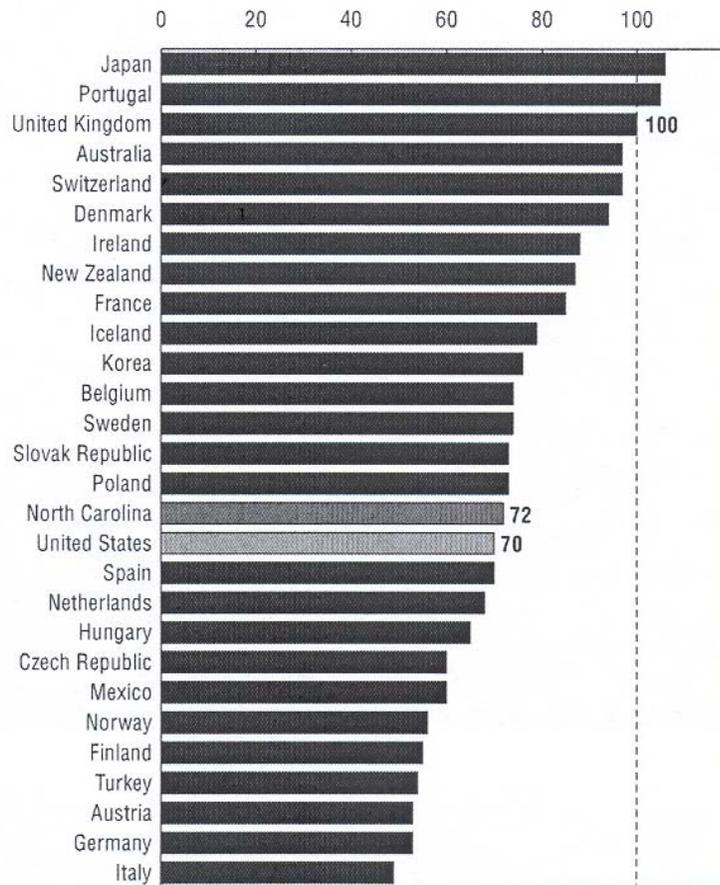
Source: Organization for Economic Co-operation and Development (OECD)

Figure 1. Percent of Young Adults (Ages 18-24) Currently enrolled in College, 2003



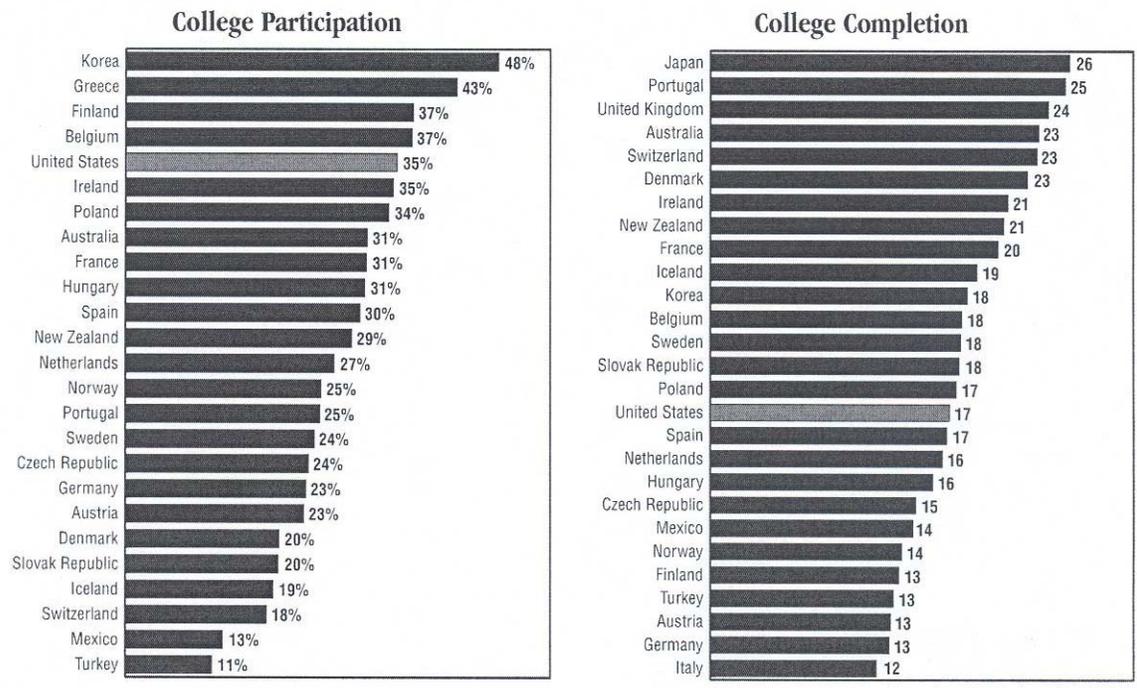
Source: Measuring Up 2006: The State Report Card on Higher Education—North Carolina.

Figure 2. Total Degrees/Certificates Awarded Per 100 Students Enrolled, 2004



Source: Measuring Up 2006: The State Report Card on Higher Education—North Carolina.

Figure 2: The U.S. remains among the leaders in college participation ... but it ranks in the bottom half in college completion.



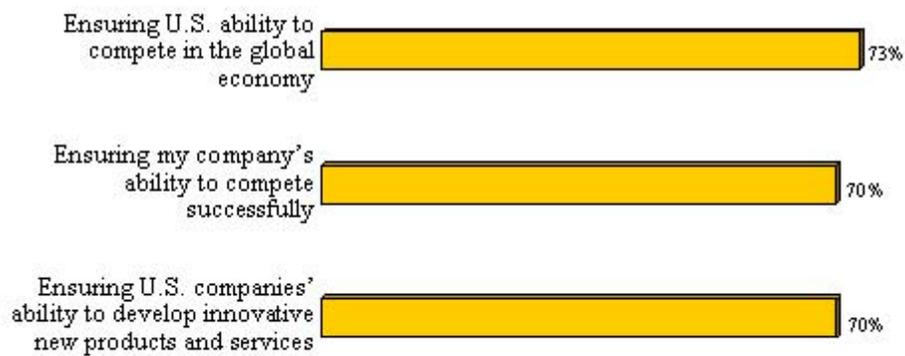
Percent of Young Adults (Ages 18 to 24) Currently Enrolled in College.

Total Number of Degrees/Certificates Completed per 100 Students Enrolled.

Source: Organisation of Economic Co-operation and Development (OECD). Data are for 2003.

Employers On Importance Of College Education To Business And The Country

% Who Say Colleges Play A Very Important Role

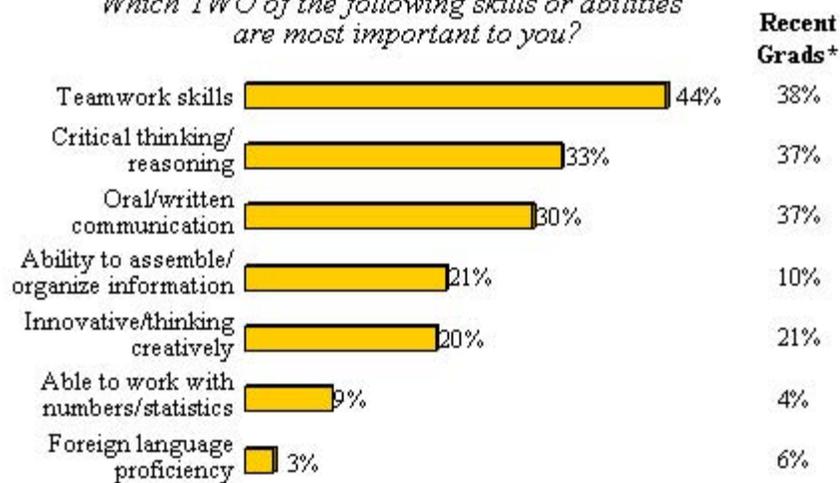


* 76% believe innovation is a very important factor in the growth and strength of the U.S. economy.

Source: Richard D. Hart Research Associates, Inc., Washington, DC:, 2006.

Most Important Skills Employers Look For In New Hires

Which TWO of the following skills or abilities are most important to you?



* Skills/abilities recent graduates think are the two most important to employers

Source: Richard D. Hart Research Associates, Inc., Washington, DC:, 2006.

Appendix I

	%
The ability to apply knowledge and skills to real-world settings through internships or other hands-on experiences	67
Concepts and new developments in science and technology	59
Global issues and developments and their implications for the future	56
Critical thinking and analytical reasoning skills	55
The ability to effectively communicate orally and in writing	55
The ability be innovative and think creatively	54
A sense of integrity and ethics	52
Proficiency in a foreign language	51
The ability to solve complex problems	49
The ability to locate, organize, and evaluate information from multiple sources	48
Teamwork skills and the ability to collaborate with others in diverse group settings	47
Cultural values and traditions in America and other countries	46
Civic knowledge, civic participation, and community engagement	46
Democracy and government	39
The role of the United States in the world	38
The ability to work with numbers and understand statistics	34

Source: Richard D. Hart Research Associates, Inc., Washington, DC: 2006.

