Basic Employability Skills: A Triangular Design Approach

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Abstract

Purpose – This paper seeks to examine the basic employability skills needed for job performance, the reception of these skills in college, and the need for additional training in these skills after graduation.

Design/Methodology/Approach – The research was based on a triangular design approach, in which the attitudes of three distinct groups – recent graduates, the faculty who taught them, and human resource managers who recruit them – were studied. The participants responded to a survey that included 47 items measuring eight dimensions of basic employability skills.

Findings – The study revealed considerable differences in opinion among the three groups with regard to the skills needed for job performance, the skills received by college graduates, and the additional training needed.

Research limitations/implications – The research study was limited to graduates, faculty, and recruiters at a business school in southern California. It is suggested that further studies be conducted to determine whether differences in attitudes from those found in this study might exist.

Practical implications – Although the respondents identified the importance of leadership skills, these skills were noted to be below expectations for industry. Moreover, the need for additional training of recent graduates appears to be a major concern according to the results.

Social implications – In a highly competitive economy, there is little chance that unprepared graduates will be successful in obtaining employment and then performing their jobs.

Originality/value – The triangular approach taken in this study validates the importance of the interconnectedness among graduates, faculty, and industry. It is therefore imperative to strengthen the communication across these groups to ensure adequate preparation of graduates.

Keywords: Attitudes, Graduates, Faculty, Human Resource Managers, Job Performance, Soft Skills, Basic Employability Skills, Transferable Skills, Triangular Design

Article type: Research paper

Introduction

Students enter college with the expectation that they will acquire the knowledge, the skills, and the abilities to enter the workforce. Graduates expect that they will have acquired the skills necessary to perform their jobs and advance their careers. In the modern knowledge economy, employers have an expectation that a college education will provide graduates with the employability skills required to perform their jobs (Bok, 2006). Cappelli (2008) indicated the following:

> The talent problems of employers, employees, and the broader society are intertwined. Employers want the skills they need when they need them, delivered in a manner they can afford. Employees want prospects for advancement and control over their careers (p. 81).

This study is the first of two articles that examined the attitudes of graduates, faculty, and human resource managers regarding (a) the basic employability skills that are needed for job performance, (b) the extent to which those skills are received in college, (c) whether the need exists for additional training in the skills after graduation, and (d) how these skills predict career advancement potential. This first article describes the prevalent attitudes toward the various basic employability skills. The second article will examine how basic employability skills predict career advancement potential using structural equation modelling.

Unlike previous studies that have focused primarily on the attitudes of human resources managers, the novelty in this study was that recent college graduates and college faculty were also surveyed. This triangular design approach allows us to contrast all three participant groups and to determine whether any critical gaps exist in attitudes. Descriptive statistics were used to determine the attitudes of the participants on eight basic employability skills. The results of the study revealed that the three groups have a somewhat different perspective on ranking the various skills that are needed for job performance, that are received in an undergraduate education, and that are needed for additional training once employment begins.

1. Importance of the Study

Basic employability skills are transferable core proficiencies that represent essential functional and enabling knowledge skills and abilities required to succeed at all levels of employment in the 21st century workplace (Overtoom, 2000). Eight dimensions of basic employability skills were the focus of this study:

- basic literacy and numeracy skills
- critical thinking skills
- management skills
- leadership skills
- interpersonal skills
- information technology skills
- systems thinking skills
- work ethic disposition

An understanding of the attitudes in relation to these various skills is important because education and industry seem to work in separate systems, and employers historically have not clearly communicated their needs and expectations for the college graduates that they have sought to hire. According to Richens (1999), even if a collaborative process between education and industry existed, the structure of education has made it difficult to implement systemic changes. Rosenbaum and Person (2003) described the misconception that increased skill demand by industry often implies that employers need recruits with specialized academic skills. However, employers have maintained that their greatest needs are basic employability skills. Plastrik, Seltzer, and Taylor (2003) observed that if nothing is done to improve educational performance, the gap between the skill needs of industry and the skills received by graduates will continue to grow.

2. Relevant Literature

Three seminal studies in the last thirty years helped to lay the foundation for all subsequent research with regard to equating the skills received in college and the skills needed for job performance in corporate America. In 1983, the National Commission on Excellence in Education was established and charged with the mandate to report to the Secretary of Education on the quality of the education system in the United States. Its report, *A Nation at Risk: The Imperative for Education Reform* described the American education system as mediocre and called for the creation of a quantifiable level of educational achievement that would enable students to be prepared for jobs in the 21st century global economy. In 1988, the American Society for Training and Development published a national study titled *Workplace Basics: The Essential Skills Employers Want*. In 1991, following the appointment of a commission by the

U.S. Secretary of Labor, the *Secretary's Commission on Achieving Necessary Skills* (*SCANS*), further reported on the basic skills required for workers to help U.S. industries to retain their competitive advantage in productivity and innovation in a global economy. The findings of these studies identified and addressed the various basic employability skills.

The *SCANS* report found that students believed that employment skills were learned on the job, through participation in extracurricular activities, or simply by osmosis. Despite the fact that the focus of the *SCANS* report was on the preparation of high school students for entry level jobs, Packer (1992) emphasized that the competencies described in the report applied to all levels of education and are all important to succeed at work.

Notwithstanding the findings of the *SCANS* report, more than a decade later, the National Association of Manufacturers' *2005 Skills Gap Report* found that more than 50 percent of the respondents to a national survey reported that employees had inadequate basic employability skills. The report noted that inadequacies related to work ethic were a contributing factor to negative business performance. Furthermore, the research literature revealed that the most important basic employability skill needed for job performance and the most lacking from graduates was basic literacy and numeracy skills, specifically communication. According to the Job Outlook 2009 report (National Association of Colleges and Employers, 2009), employers considered communication skills as the most important skill required and the most deficient skill received for college graduates.

Basic employability skills were revisited in the 2007 report of the National Center on Education and the Economy titled *Tough Choices or Tough Times: The Report of the New Commission on the Skills of the American Workforce*, which was based on two years of comprehensive research. The report indicated that "the core problem is that our education and training systems were built for another era, an era in which workers needed only rudimentary education" (p. 9).

This fact that significant confusion existed concerning employability skills was a common thread in much of the relevant literature of the last dozen years. Nunan (1999) indicated that students expected employers to recognize their academic degree as one that certified them with the skills needed for job performance. Rosenbaum (2002) stated that if students do not learn basic employability skills before they are hired, then they may not have the opportunity to learn them on the job since employers may be reluctant to invest in the resources needed to provide

remedial training for these skills. McMasters (2004) observed "ignorance of industry needs from a university perspective" (p. 368).

Bok (2006) reported that college professors and administrators felt they were teaching students what they need to know, although only 35% of a sample of industry executives thought that colleges taught students what was important to succeed at work. He indicated that "it is worth asking whether faculties themselves are not partially to blame by permitting a certain laxity to become entrenched on many campuses" (p. 305). In addition, Bok cited grade inflation and the tolerance for late work as causes for the lack of self-discipline that employers complained about. Robst (2007) stated that college students believed that a college education provided them with all the skills necessary to obtain employment upon graduation.

Clearly, employers may also require proficiency in job-specific specialist skills, which have a limited shelf life due to the rate of change in technology (Gush, 1996). As a result, employers are likely to consider employability skills to be more valuable than specialist skills (California Postsecondary Education Commission, 2007). Moreover, Robst (2007) emphasized that more generalist, basic transferable employability skills provided workers the ability to enter the workforce, to perform jobs, to advance careers within a company, and to change jobs within and across industries.

The education system has come under increasing scrutiny. The Partnership for 21st Century Skills (2005) found that assessment of student achievement is driven by knowledge of facts and not the ability to apply knowledge with critical thinking and problem solving skills needed in the modern workplace. The outcome therefore is a continuing gap between the skills students acquire in school and the skills needed to enter the workforce and perform their jobs. Duzer (2006) observed that the education system, with its foundation in 19th century structure and a linear pedagogical process, does not have the ability to meet the needs of today's global economy. In a 2009 personal communication with the former Harvard University president, Derek Bok, he suggested that post-secondary institutions face internal conflicts that affect student achievement in basic employability skills. Among these are that college faculty do not consider the teaching of basic employability skills to be part of their curricula and that faculty simply may not consider themselves to be qualified to teach basic employability skills.

Bracey (2006) suggested that if it is difficult to know what skills are required by industry, then it is equally difficult to determine if there is a gap between what skills are needed and

received from employees. At the 2007 Symposium on Workforce Readiness of the Future U.S. Labor Pool, the Society of Human Resource Management stated the following in *Critical Skill Needs and Resources for the Changing Workforce*:

> Employers have not clearly stated the skills and capabilities they desire, and the U.S. educational system is not producing the quantity and quality of graduates needed. Understanding what employers need is imperative for making useful recommendations or changes to U.S. education policy and curriculum in order to produce graduates that are well equipped in the workplace (p. 8).

3. The Eight Dimensions of Basic Employability Skills

Based on the literature, the gap among employers, educators, and students has continued, and possibly widened. For the purposes of this study, then, it is important to more fully define what constitutes basic employability skills.

Basic Literacy and Numeracy Skills are defined in the *SCANS* report as the ability to read, write, speak, listen, and perform basic mathematical procedures. Reading skills include the ability to interpret written information. Writing skills include the ability to communicate thoughts in letters and reports. Mathematical skills include the ability to solve practical problems through the use of a variety of mathematical techniques.

Critical Thinking Skills include the ability to think creatively, make decisions, and solve problems (*SCANS*, 1991).

Leadership Skills include the ability to motivate others to achieve organizational goals (Schermerhorn, 2008). Typical characteristics of effective leadership are responsibility, self-esteem, and the ethical qualities of integrity and honesty.

Management Skills include the activities of planning, organizing, leading, and controlling to meet organizational goals (Schermerhorn, 2008).

Interpersonal Skills include the ability to work in teams, help others to learn, provide customer service, negotiate agreements, resolve differences, and work in a multicultural organization (*SCANS*, 1991).

Information Technology Skills include the ability to select procedures, equipment, and tools to acquire and evaluate data (*SCANS*, 1991).

Systems Thinking Skills include the ability to understand and operate within social, organizational, and technological systems. Designing and suggesting modifications to systems

and explaining the interaction of systems in the context of the global economy are elements of systems thinking (Senge, 2000).

Work Ethic refers to an individual's disposition toward work and it includes attendance, punctuality, motivation, the ability to meet deadlines, patience, attitude, dependability, professionalism, and realistic expectations of job requirements and career advancement. According to the National Association of Colleges and Employers *Job Outlook 2009* report, work ethic is not an actual skill; however, employers that responded to this study responded that, with the exception of communication skills, work ethic was the competency most lacking in recent graduates.

Several researchers, including Rosenbaum (2002), Bracey (2007), and Carnevale, Gainer, Meltzer, and Holland (2008), have observed that employers described work habits as being more important than academic skills. Rosenbaum suggested that "it is these skills that are sometimes considered to be the best predictors of job performance" (p. 10). Bracey criticized the emphasis on academic achievement in the 2002 No Child Left Behind legislation for suppressing student creativity. He also cited Chester E. Finn, Jr., president of the Thomas B. Fordham Foundation, who argued that "requiring schools and teachers to focus on test results in basic academic skills negatively affects students' abilities to develop the other skills that are central to the nation's competitive advantage" (p. 26).

Having framed the various basic employability skills, we set out to determine the magnitude of the gap in attitudes among recent college graduates, college faculty, and employers.

4. Methodology

The setting for the study was a business school at a university located in southern California. The university has 22,000 undergraduate students and the business school has approximately 5,000 undergraduate students. Participants included recent graduates, the faculty who design and teach the courses, and the human resource managers who recruited at the schools. A triangular approach was used in this study. According to Senge (2000), a triangular design approach permits us to study the problem from multiple points of view, providing a richer and ultimately more useful way of addressing the issue (Figure I).

[Take in Figure I]

Three surveys (i.e., one for each category of respondent) were developed through modification of existing research by Lee, Trauth, and Farwell (1995), Porterfield (1999), Richens (1999), Loscertales (2007), and Kaplan (2008). Each respondent survey used a three column 5-point Likert scale for skills needed, received, and the need for additional training.

The surveys included 47 items that measured the eight dimensions of basic employability skills. There were five items that measured basic numeracy and literacy skills, six items that measured critical thinking skills, five items that measured leadership skills, four items that measured management skills, six items that measured interpersonal skills, seven items that measured information technology skills, seven items that measured systems thinking skills, and seven items that measured work ethic. The survey instruments were validated by an independent panel to ensure that all the questions were understandable to the respondents. See the Appendix for the items that were contained in the surveys.

In addition to the questions concerning basic employability skills, the surveys included 11 questions based on the research of Kaplan (2008) and Loscertales (2007) that examined the attitudes of each respondent on career advancement potential. (We will address the prediction of career advancement potential in our subsequent article.)

A total of 532 surveys were distributed by email to 343 graduates, 92 faculty, and 97 human resource managers in September 2009 and were completed online using surveymonkey.com. Respondent confidentiality was maintained, and results of the study were reported with aggregate data. No respondent identifiers were gathered at any time. The participants selected to take part in the survey are only known to the researchers.

5. Findings

Table I presents the adjusted mean for the number of items in each variable and the differences between respondent attitudes regarding (a) the need for, (b) the reception/emphasis of, and (c) the need for additional training in the eight dimensions of basic employability skills. Some of the key findings of the triangular model are indicated below.

Graduates

Among the eight basic employability skills, graduates scored leadership and work ethic as the most important skills needed for job performance, according to their adjusted mean scores (4.81). Graduates felt that leadership skills were more important for job performance than faculty (4.32) and human resource managers (4.53); similarly, work ethic was reported by graduates as a more important need than faculty (4.43) and human resource managers (4.53).

In terms of the reception of skills and the need for additional training, graduates felt they received more leadership skills in college (4.31) than faculty felt was emphasized in the curriculum (3.88) and that human resource managers felt they received from recent graduates (3.78). However, human resource managers felt that graduates required more training in leadership skills (3.33) than faculty (3.10) and graduates (2.81).

In addition to the low score for leadership training needed, it is interesting to note that although literacy/numeracy and work ethic were the two basic employability skills that were found in the literature to be most important, graduates felt that they were relatively well prepared for the workplace in these skills as well (both at 2.81). While the graduates certainly acknowledged their importance in terms of skills needed, the descriptive statistics show them to be relatively unimportant in terms of the need for additional training.

Faculty

Interpersonal skills showed the highest adjusted mean score reported for skills needed for job performance (4.63) by faculty. However, graduates felt that interpersonal skills were even more important for job performance than faculty (4.76). Faculty and graduates both felt that interpersonal skills were more important for job performance than human resource managers (4.24). Regarding skills emphasized in the curriculum, work ethic ranked first (4.17). However, graduates felt they received more work ethic skills in college (4.34) than faculty felt they emphasized in the curriculum and that human resource managers felt they received from recent graduates (3.92). Moreover, among the skills requiring additional training, work ethic scored lowest (2.83).

Human Resource Managers

For human resource managers, literacy and numeracy showed the highest adjusted mean score reported for skills needed for job performance (4.55) and for skills received from recent graduates (3.93). Leadership and work ethic skills were also considered important for job performance (4.53). Regarding the need for additional training, human resource managers reported the highest adjusted mean for the need for additional training in management skills (3.65). This view that recent graduates required more training in management skills was stronger than that indicated by faculty (3.38) and graduates (2.94).

The largest difference reported in the study dealt with the reception of management skills in college. Human resource managers reported this variable to be .77 less than graduates. Moreover, faculty reported this to be .69 less than graduates.

Table I.

Triangulation: Graduates, Faculty, and Human Resource Managers

VARIABLE	GRADS M/ # of items	FAC M/ # of items	HR M/ # of items	Faculty - Graduates	HR - Graduates	HR - Faculty
Critical Thinking Skills Needed	4.74	4.20	4.18	-0.54	-0.56	-0.02
Critical Thinking Skills Received	4.20	3.57	3.68	-0.63	-0.52	0.11
Critical Thinking Skills Training Needed	3.06	3.46	3.36	0.40	0.30	-0.10
Information Technology Skills Needed	4.50	4.06	3.88	-0.44	-0.62	-0.18
Information Technology Skills Received	4.16	3.79	3.85	-0.37	-0.31	0.06
Information Technology Skills Training Needed	3.34	3.18	3.13	-0.16	-0.21	-0.05
Interpersonal Skills Needed	4.76	4.63	4.24	-0.13	-0.52	-0.39
Interpersonal Skills Received	4.34	3.72	3.70	-0.62	-0.64	-0.02
Interpersonal Skills Training Needed	2.82	3.22	3.39	0.40	0.57	0.17
Leadership Skills Needed	4.81	4.32	4.53	-0.49	-0.28	0.21
Leadership Skills Received	4.31	3.78	3.88	-0.53	-0.43	0.10
Leadership Skills Training Needed	2.81	3.10	3.33	0.29	0.52	0.23
Literacy-Numeracy Skills Needed	4.75	4.18	4.55	-0.57	-0.20	0.37
Literacy-Numeracy Skills Received	4.44	3.88	3.93	-0.56	-0.51	0.05
Literacy-Numeracy Skills Training Needed	2.81	3.28	3.50	0.47	0.69	0.22
Management Skills Needed	4.68	4.00	4.05	-0.68	-0.63	0.05
Management Skills Received	4.15	3.46	3.38	-0.69	-0.77	-0.08
Management Skills Training Needed	2.94	3.38	3.65	0.44	0.71	0.27
Systems Thinking Skills Needed	4.48	3.85	3.95	-0.63	-0.53	0.10
Systems Thinking Skills Received	4.07	3.45	3.50	-0.62	-0.57	0.05
Systems Thinking Skills Training Needed	3.53	3.23	3.26	-0.30	-0.27	0.03
Work Ethic Needed	4.81	4.43	4.53	-0.38	-0.28	0.10
Work Ethic Received	4.34	4.17	3.92	-0.17	-0.42	-0.25
Work Ethic Training Needed	2.81	2.83	3.31	0.02	0.50	0.48

6. Implications of the Findings

The finding that all three respondent groups viewed leadership to be a critical skill needed for job performance was rather telling. Although the respondents perceived the importance of leadership skills, these skills were noted to be below expectations for industry; this problem was highlighted in the *IBM Global Human Capital Study 2008*, a study that found 75% of its respondents who reported the inability to develop future leaders as a critical issue for organizations today. Graduates also viewed work ethic to be of equal importance for job performance as leadership. The respondent groups differed in their rankings of the various employability skills. Interpersonal skills needed for job performance scored higher for graduates and faculty, while basic literacy and numeracy skills scored higher for graduates and human resource managers. Systems thinking skills was reported by all respondent groups as relatively low in importance when it comes to the employability skills needed for job performance. However, the reason why this might not be surprising is because this skill is likely to be given little emphasis in undergraduate education.

Regarding the reception of basic employability skills, all three respondent groups ranked literacy-numeracy relatively highly. The three groups differed on some of the other categories with regard to the reception of employability skills, although they each viewed work ethic received to be important. The fact that faculty ranked work ethic emphasized in college higher than any other skill is perhaps surprising given the shortcomings with regard to this item noted throughout the literature.

The need for additional training of recent graduates appears to be a major concern according to the results. In its 2007 report, the National Governors Association indicated that employers expressed a need to provide remedial basic employability skills training to new employees. Cappelli (2008) observed that organizations have increased training in basic employability skills so that employees can function in a range of jobs. Graduates felt additional training was needed most in systems thinking skills, while faculty felt that additional training in critical thinking skills was most important and human resource managers felt that additional training in management skills was most important. The fact that both graduates and faculty viewed the need for additional training in work ethic as relatively insignificant is particularly surprising, again given the shortcomings with regard to this item noted throughout the literature.

Since the study confirms that work ethic is indeed an important need in the workforce, this variable warrants our attention. In trying to understand work ethic in the context of where it ranked among the descriptive statistics in this study, it is possible that there may not be sufficient rigor in college courses to develop a disposition toward self-reliance before students enter the workforce. Moreover, understanding the importance of work ethic is one thing and being able to demonstrate it in a positive manner is another.

7. Recommendations

It is noticeable from this study that no one respondent group was responsible for the outcome of graduates' preparedness for work. Because of this apparent lack of communication among the three groups, it seems reasonable to conclude there will be differences in the attitudes of graduates, faculty, and human resource managers. It is incumbent upon students and faculty to do well in their respective positions so that students will be able to develop the skills needed to enter and to advance in their careers. In a highly competitive economy, there is little chance that unprepared graduates will be successful in obtaining employment and then performing their jobs. From a systems perspective, education and industry are interrelated; the product of the education system is the input of industry. In this business relationship, the supplier has to understand what skills the customer needs. If these groups work in a vacuum, then quality employees will not be available.

References

A Compact for Postsecondary Education (2007), National Governors Association, Washington, DC.

A Nation at Risk: The Imperative for Education Reform (1983), National Commission on Excellence in Education, Washington, DC.

A Report on the Landscape of Assessments for 21st Century Skills (2005), Partnership for 21st Century Skills, Washington, DC.

Bok, D. (2006), *Our Underachieving Colleges*, Princeton University Press, Princeton, NJ.

Bracey, G.W. (2006), "Research: The high skills hoax", *Phi Delta Kappan*, Vol. 88 No. 1, pp. 93-94.

Bracey, G. W. (2007), "Growing an achievement gap", *Education Week*, Vol. 27 No. 25, p. 26.

Cappelli, P. (2008), "Talent management for the twenty-first century", *Harvard Business Review*- March, pp. 74-81.

Carnevale, A.P., Gainer, L.J. & Meltzer, A.S. (1990), *Workplace Basics: The Essential Skills Employers Want*, Jossey-Bass, San Francisco, CA.

Critical Skill Needs and Resources for the Changing Workplace (2007), Society for Human Resource Management, Alexandria, VA.

Duzer, E. V. (2006), "Overcoming the limitations of the factory system of education", available at http://www.eric/ed/gov- 490530 (accessed January 19, 2008.

Gush, J. (1996), "Graduates into the retail industry: An assessment of the nature and causes of mismatches between the needs and expectations of the retail industry and graduate employees", *International Journal of Retail and Distribution Management*, Vol. 24 No.9, pp. 5-15.

Heimler, R. (2010), "Attitudes of college graduates, faculty, and human resource managers regarding the importance of skills acquired in college and needed for job performance and career advancement in the retail sector", Ed.D. dissertation, Dowling College, Oakdale, NY.

Job Outlook (2009), National Association of Colleges and Employers, Bethlehem, PA.

Kaplan, R. S. (2008), "Reaching your potential", *Harvard Business Review*- July, pp. 45-49.

Lee, D., Trauth, E. & Farwell, D. (1995), "Critical skills and knowledge of IS professionals: A joint academic industry investigation", *MIS Quarterly*, Vol. 19 No. 3, pp. 313-340.

Loscertales, M. (2007), "Opening the black-box of individual career advancement: The role of organizational factors", Ph.D. dissertation, University of Pennsylvania, Philadelphia, PA.

McMasters, J. (2004), "Influencing engineering education: One (aerospace) industry perspective", *International Journal of Engineering Education*, Vol. 20 No. 3, pp. 353-371.

Nunan, T. (1999), "Graduate qualities, employment and mass higher education", paper presented at the HERDSA annual conference, Melbourne, Australia.

Overtoom, C. (2000), *Employability Skills: An Update*, Center on Education and Training for Employment, Columbus, OH.

Packer, A. H. (1992), "Taking action on the SCANS report", *Educational Leadership*, Vol. 49 No. 6, pp. 27-31.

Plastrik, P., Seltzer, M.B. & Taylor, J.C. (2003), *Changing Labor Markets: A Systems Approach to Reform*, Jobs for the Future, Boston, MA.

Porterfield, S. (1999), "U.S. Fortune 500 companies human resource directors' perceptions regarding competencies required in the 21st century of entry-level business employees with four-year business degrees, Ph.D. dissertation, Mississippi State University, Starkville, MS.

Richens, G. (1999), "Perceptions of southern Nevada employers regarding the importance of SCANS workplace basic skills", paper presented at the annual meeting of the Association for Career and Technical Education, Orlando, FL.

Robst, J. (2007), "Education and job match: The relatedness of college major and work", *Economics of Education Review*, Vol. 26 No. 4, pp. 397-407.

Rosenbaum, J. (2002), "Beyond empty promises: Policies to improve transitions into college and jobs", Office of Vocational and Adult Education, U.S. Department of Education.

Rosenbaum, J. & Person, A. (2003), "Beyond college for all: Policies and practices to improve transition into college and jobs", *Professional School Counseling*, Vol. 6 No. 4, pp. 252-260.

SCANS Blueprint for Action: Building Community Coalitions (1991), U.S. Department of Labor: The Secretary's Commission on Achieving Necessary Skills, Washington, DC.

Schermerhorn, J. (2008), *Management*, 9th edition, John Wiley & Sons, Inc., Hoboken, NJ.

Senge, P. (2000), *A Fifth Discipline Resource: Schools that Learn*, Doubleday, New York, NY.

The Looming Workforce Crisis: Preparing American Workers for 21st Century Competition (2005), National Association of Manufacturers, Washington, DC.

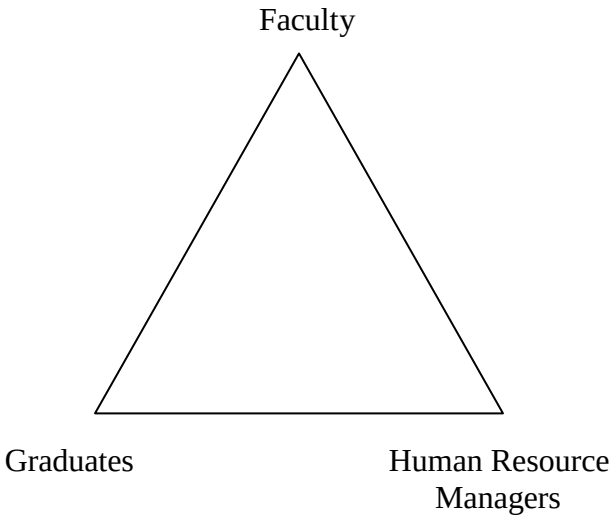
The Nexus Between Postsecondary Education and Workforce Development: Conclusions and Policy Options (2007), California Postsecondary Education Commission No. 07-22, San Francisco, CA.

Tough Choices Tough Times: The Report of the New Commission on the Skills of the American Workforce (2007), National Center on Education and the Economy, Washington, DC.

Unlocking the DNA of the adaptable workforce (2008), The IBM Global Human Capital Study, Armonk, NY.

Figure I.

Research Design Conceptual Model



Appendix

List of Survey Questions

Basic Literacy and Numeracy Skills

1. I can perform basic computations and approach practical problems with different mathematical techniques.
2. I can organize basic ideas; communicate orally.
3. I can organize basic thoughts, ideas, and messages in writing; create documents such as letters, directions, manuals, reports, graphs, and flow charts.
4. I can receive, attend to, interpret, and respond to basic verbal messages/cues.
5. I have the ability to locate, understand, and interpret basic written information in documents such as manuals, graphs, and schedules.

Critical Thinking Skills

6. I can generate new ideas.
7. I can specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
8. I can recognize problems and devise and implement a plan of action.
9. I can organize and process symbols, pictures, graphs, objects and other information.
10. I can acquire and apply new knowledge and skills from multiple print and digital sources.
11. I can discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.

Leadership Skills

12. I can exert a high level of effort and persevere toward goal attainment.
13. I believe in my own self-worth and maintain a positive view of myself.
14. I can set personal goals, monitor progress, exhibit self control and take responsibility for my actions.
15. I can choose ethical courses of action.
16. I can communicate ideas to justify positions, persuade and convince others, and responsibly challenge existing procedures and policies.

Management Skills

17. I can select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
18. I can use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
19. I can acquire, store, allocate, and use materials or space efficiently.
20. I can assess skills and distribute work accordingly, evaluate performance and provide feedback.

Interpersonal Skills

21. I contribute to group efforts.
22. I help others to learn.
23. I work to satisfy customers' expectations.
24. I work toward agreements involving the exchange of resources, and resolve divergent interests.
25. I work well with men and women from diverse backgrounds.

26. I can demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.

Information Technology Skills

27. I can choose procedures, tools or equipment including computers and related technology.
28. I understand overall intent and proper procedures for the setup and operation of equipment.
29. I can prevent, identify, or solve problems with equipment, including computers and other technology.
30. I can identify the need for data, obtain data from existing sources or create it, and evaluate its relevance and accuracy.
31. I can organize, process and maintain written or computerized records and other forms of information.
32. I can select and analyze information and communicate the results to others in oral, written, graphic, pictorial or multimedia methods.
33. I can employ computers to acquire, organize, analyze and communicate information, and demonstrate some proficiency with standard software.

Systems Thinking Skills

34. I know how social, organizational, and technological systems work.
35. I can distinguish trends, and predict the impacts of actions on system operations.
36. I make suggestions to modify existing systems to improve products and services and develop new or alternative systems.
37. I know how to assess the efficient operation of social, organizational and technological systems.
38. I know how to recognize the efficient operation of social, organizational and technological systems.
39. I understand the interaction and interrelationship of systems within an organization.
40. I understand the interaction and interrelationship of systems in a global economy.

Work Ethic

41. I attend required organizational meetings and events.
42. I am on time for organizational meetings and events.
43. I achieve organizational and personal goals independently.
44. I complete work on-time.
45. I understand organizational protocols and procedures.
46. I demonstrate a positive attitude at work.
47. I am dependable at work.

Note: The language indicated here corresponds to that shown in the Graduate Survey, whereas in the Faculty Survey "I" was replaced with "Our graduates" and in the Human Resource Manager Survey the language used was "Recent college graduates with 1 to 2 years of experience."

About the Authors

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