A series of studies of the experience of employers with schools and their graduates in the 1980s has established that employers want employees with cognitive and subject matter skills, but with other skills as well. These skills are summarized, and the development of an Employment Readiness Profile is proposed, which would be an assessment administered to a national sample of students and to dropouts if feasible. Development and design would be guided by a committee of employer representatives, supplemented with educators and labor market experts. Periodic surveys of employers' needs would update the information on needed skills. Results of such an assessment would describe proficiencies at the subgroup level and not at the individual level. Its purpose is to measure progress toward objectives set by a consensus process. It does not presuppose that all attributes desired by employers are the responsibilities of schools. Development of the profile will require being more precise about employer needs and then sorting out the responsibilities of schools to teach and those of employers to provide orientation, training, and experience. Eight important reports that express the new consensus are listed. Appendix A provides notes on the validity of the proposed profile, and Appendix B is a list of 20 publications cited. (SLD)
SKILLS EMPLOYERS NEED
TIME TO MEASURE THEM?
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TIME TO MEASURE THEM?

A Policy Information Proposal

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Preface

Despite the best of intentions, educational policy makers and public officials cannot make good decisions absent the necessary information. A good example is the important matter of imparting the necessary skills to create a competent workforce. Employers have strong views about what they need, and a general consensus has emerged among them, as well as among the employer organizations that represent them. I have attempted to report those views in this paper.

Beyond this information the report makes available on the skills employers need, there is a proposal for a new indicator, an Employment Readiness Profile. When we know the skills young people have, with such an indicator, we will be better equipped to make the changes, whether in the schools or in employer organizations, that will improve "workforce readiness," to use a phrase now widely known as a result of the Hudson Institute's report, Workforce 2000. And we will be able to track the progress we are making.

The information here assembled and condensed will be useful, I believe, as it stands. Whether the call for a new indicator is useful will, I hope, be debated. The views expressed are the author's, and not necessarily those of Educational Testing Service.

Paul E. Barton

Acknowledgements

A number of people reviewed successive drafts of this manuscript and efforts have been made to incorporate suggestions. The objective was to achieve some consensus on the proposal, although all reviewers would not likely agree with all that is within the document.

Reviewers include Evelyn Ganzglass, Program Director, Training and Employment, National Governors' Association; Everett Crawford, National Commission for Employment Policy; William Delaney, US Department of Labor; Robert Holland, President, Committee for Economic Development, William Kolberg, President, National Alliance of Business; Leonard Lund, the Conference Board; Jerome Rosow, President, Work in America Institute; Joan Wills, Vice President, National Center on Education and the Economy; Willard Wirtz, Wirtz and Friedman.

At Educational Testing Service, reviewers have included Archie Lapointe, Lynn Jenkins, Terry Salinger, Douglas Rhodes and Norman Freeburg.

The author also benefited from a seminar held by the National Center for Education Statistics, chaired by John Ralph, on the subject of an Employment Readiness Indicator.
Summary

A series of studies of employers' experience with the schools and their graduates, conducted throughout the 1980's, have established that employers want candidates with cognitive/subject matter skills, but more than that. This brief paper summarizes their needs...as they express them...and proposes the development of an Employment Readiness Profile. This would be an assessment administered to a national sample of students and, if feasible, to dropouts. Its development and design would be guided by a committee of employer representatives, supplemented with educators and labor market experts. Periodic surveys of employers' needs would update the information on the skills they need.

The results of such an assessment would describe proficiencies at the subgroup level (for example, 12th grade Black males) and not at the individual level. Its purpose is to measure progress toward objectives set by a consensus process; it does not presuppose that all attributes employers desire are the responsibilities of the schools. The work on the development of an Employment Readiness Profile will require being more precise about employer needs, and then sorting out the responsibilities of schools to teach and those of employers to provide orientation, training and experience.
Introduction

While the mission of public education is by no means solely the production of people ready for employment, most Americans believe it should do a pretty good job of this even as it fulfills a much broader purpose in passing on the civilization from one generation to the next.

There is emerging the possibility-probability that employers and schools are not communicating well on the critical matter of what constitutes "readiness for employment." This becomes a grave issue as increased productivity is increasingly seen as the solution to successful competition in international markets.

What employers want and what schools do, to be sure, converge in comforting ways. There is a convergence in agreement over the need for all graduates to have mastered the "basic skills"; the reform movements of the last fifteen or so years have resulted in a growing achievement in these basics among those who complete school. There is also wide agreement that schools have not done well with "higher-order skills," or in the new basics, although the terms elude precise definitions.

The consensus is firmly formed that the economy...and the national interest...urgently require that we do a much better job of developing a workforce that can make America competitive again in the international economy. We hence propose a measure that while not itself the key, may be a drawer wherein lie other keys. It represents the implementation of views made in many employer studies and reports, but most specifically of a proposal made by the Committee for Economic Development in its report Investing Our in Children:

"Regular assessments of employment needs enable us to learn a great deal about preparation for employment. We believe that it would be helpful if every four years there were an assessment of the employment needs of business and the employment readiness of high school graduates designed by an advisory committee with substantial representation from the business community."

Such an assessment (which could be modeled on the successful design of the National Assessment of Educational Progress) would recognize that the present measurements of school based performance are only a partial (though extremely important) barometer of progress in producing a quality labor force. The reasons for going beyond the traditional assessments of the kind done by NAEP are three:

- Employers are looking for basic academic skills, but they are looking for much more than that
- Even in cognitive areas, proficiency in school and work settings may be different
- A consensus has recently developed among employers and employer organizations on the skills employers need
Employers Speak

During the last decade or so there have been a number of surveys of employers to find out what they want entry workers to be able to do, and what their priorities are for the public school system. While the types of employers in these surveys vary, as do the specific questions asked, the pattern of responses is similar from survey to survey. These results establish a basis for identifying the major kinds of skills and attributes employers want entry workers to have. They will be briefly summarized and cited below.

1. Conference Board Survey of Executives

This Conference Board survey, conducted in 1983, was of public affairs and training or personnel executives. Also, a telephone survey reached 100 employees in greater depth.

- While 77 percent of these executives reported increases in computer skills, declining abilities were reported by 65 percent in reading, 74 percent in writing, and about 60 percent in both science and mathematics.

- Employers were concerned with the observed inability of high-school graduates to function effectively as communicators.

- Attitudes toward work and the workplace are a primary problem.

- These large firms, however, hire few recent high school graduates. (Young people 17 - 20 tend to find their first employment with America's 650,000 small business or the franchise organizations.)

2. Committee for Economic Development Survey of Employer Needs

The CED carried out surveys of a random sample of Fortune 500 companies as well as of 6,000 small companies, for its 1984 report, Investing in Our Children.

- the large companies ranked most desirable the characteristics of "striving to work well," "learning how to learn," "priority setting," and "communicating." The small company rankings were similar, except their fourth rank was "working well with others."

- respondents from both groups indicated that all these attributes were difficult to find in young applicants.

3. The Fortune 1,300

A telephone survey was carried out of a sample of top executives of these companies by Research and Forecasts in 1983.

- When asked how they would rank education, job experience and character in hiring decisions, character was at the top (48%), and job experience was second (34%). Only 5% ranked education first.

- Despite these rankings, 53% strongly agreed that "unless America's students are required to meet higher educational standards it will be impossible for us to compete with foreign companies in the
future" (another 37% "somewhat" agreed).

- Seventy two percent strongly agreed with the assertion that "it is more important for students to learn how to think...than it is to learn facts and figures."

4. Survey of Personnel Officers, Center for Social Organization of Schools, The Johns Hopkins University

This study, published in 1984, interviewed a sample of employers that had hired school graduates, who had been tracked in the third and fourth follow-ups of the National Longitudinal study of 20,000 high school seniors. The factors these employers considered "very important" in their hiring decisions for high school graduates were:

- strong personal impression in interview (76%)
- strong recommendation from manager in firm who knows candidate personally (56%)
- strong letters from previous employers (39%)
- strong letters of character reference (27%)
- strong scores on a written test (18%)
- strong school grades (12%)

5. Chamber of Commerce and National Association of Manufacturers' Survey

The Chamber and NAM employer surveys of the early 1980's principally focused on views about vocational and general education.

- In the Chamber survey, 78 percent thought that students who received specific occupational training were "much more" or "somewhat more" employable than those who had received a more general education.

However, six in ten suggested teaching of both general and specific skills.

- In the NAM survey 85 percent said yes to the question "Would you hire a vocational graduate rather than a non vocational graduate?" However 73 percent wanted the schools to teach both general and specific skills. Specific employability skills included attendance, punctuality and work attitudes.

6. Department of Education Survey of 101 Executives

This survey was reported in 1988 in The Bottom Line: Basic Skills in the Workplace, a report issued by the US Department of Education and Labor. It was of executives from small and medium sized firms. According to that report:

- "The definition of basic skills typically used by employers includes not only the ability to read and write but also computation, communication, and problem-solving skills."
"Business leaders also believe that schools should emphasize the importance of good habits such as self-discipline, reliability, perseverance, accepting responsibility, and respect for the rights of others."

7. San Francisco Employers

A survey was reported in 1983 asking employers which characteristics they were looking for in young, entry-level applicants. The factors they considered most important were:

- Seemed serious about work and eager to get the job (65%)
- Seemed bright and alert (50%)
- Seemed courteous and personable (43%)
- Seemed to have the ability to learn quickly (42%)
- A neat appearance and appropriate dress (39%)
- Tied for seventh place was good reading ability and good ability with numbers (32%)
- A "record of achievement in school" was last (7%)

8. Employers in Los Angeles and Torrence, California

This survey was carried out by Wilfred Wilms in 1983.

- Forty two percent (the most frequent response) thought that the chief value of an education credential was that it ensured "good attitudes and habits"; only 5 percent said credentials ensure better job skills.
- When asked what type of educational background they preferred, one in two said it didn't matter, 34 percent preferred an academic background and 17 percent a vocational background.

There are, in these surveys, some repetitive themes. Employers have concerns about the basic education students receive. But they have even greater concern about the development of many other attributes they believe are critical to employment success.
School Knowledge and Work Knowledge: A Difference?

The surveys reported above demonstrate the array of skills and personal characteristics employers are seeking. But they do not address an important question that is more recently emerging: do the knowledge and skills acquired in traditional academic tasks and settings match the knowledge and skills required for actual functioning in employment settings?

If not, it is important to know what differences there are, and whether schools could benefit from a better understanding of how to prepare students to function on the job.

The National Center on Education and Employment (Teachers College, Columbia University; the Center is funded by the US Department of Education) has underway a systematic study of the differences and similarities in learning and knowledge application in school and work settings, led by its director, Sue Berryman, and based heavily on the research of Sylvia Scribner. This effort can inform the contents of an employment readiness profile. Research, although in its infancy in this area, is highly suggestive:

- Lauren Resnick has identified four broad contrasts between in-school and out-of-school mental activity. One of them is the contrast between individual learning in school versus shared learning outside. In school, success or failure is based on independent work; tasks outside school often take place in social systems where success depends also on what others do, and the mesh of several individuals' mental and physical performance.

- "The math problems created by job situations often require no more than basic addition, subtraction, division, and multiplication skills once the problems have been identified. But the nature of the problems - the fact that they are spread over time, disorganized, and full of irrelevant materials - involves organizing information and conceptualizing the problems, a skill very different from solving the problems that are already neatly organized for students in a math textbook or test."  

- "In school, they said, they read primarily in order to be able to answer a written question related to the reading... In contrast they found that most of the things they read on the job were supposed to change their actual behaviors."  

- "---it appears from the high level of literality observed in our studies, that school math instruction does not promote the use of expert problem-solving strategies in nonschool situations. This observation is in keeping with judgments reached by a number of educators on the basis of student math performance in school and test situations."  

What is suggested is "to situate some aspects of math instruction in contexts of actual practices." (Experimental Studies

1 From a study done by J. Short for AT&T, reported in 1979.
2 Short, ibid.
In the NAEP young adult literacy study it was found that while 94% could read at least at the fourth grade level, there were surprisingly high proportions who could not solve simple problems encountered in living that were conveyed in print form. (Literacy: Profiles of America's Young Adults, National Assessment of Educational Progress, 1986)

Based on research findings such as those above, The National Center on Education and the Economy and the American Society for Training and Development have strongly urged an "Applied Learning" strategy. Current teaching methods, they say, are passive and "Students, working in isolation from one another, are told what they need to know and are rewarded for parroting what they have heard. Teachers deliver information using theoretical or deductive formats that bear little relationship to real-world contexts."

These comments echo those of John Goodlad, based on extensive and intensive observations of classrooms, and reported A Place Called School:

"the extraordinary degree of student passivity stands out. The amount of time spent in any other kind of activity (e.g., role playing, small group planning and problem solving, constructing models) was minuscule... Students were working alone most of the time..."

The Training America report elaborates on applied learning:

"Employers have long been advocates of an applied pedagogy. They argue that learning that occurs in some functional context produces better students as well as better employees. Learning in an applied context forces students to integrate interdisciplinary knowledge because the real world rarely fits into neat academic categories... Problem solving exercises are amenable to group interactions, engaging individual students' cognitive, interpersonal, teamwork, and organizational skills."

It is not the intent here to prescribe instructional practice. Rather, it is to state the rationale for a larger assessment, which is here called the Employment Readiness Profile. Such an assessment could use tasks of the kind that would be dealt with in an applied learning mode. In any event, an Employment Readiness Profile would assess ability to deal with situations that were encountered in the workworld, and life generally, rather than in structures typical of classroom exercises. A good start has been made on this in the NAEP Young Adult Literacy Study, with its Prose, Document, and Quantitative Proficiency scales. Finding out what students can't do is one way to inform teaching, and those officials responsible for instruction. The matter of balance would have to be dealt with; public education has a much larger mission than meeting the needs of employers as they define them... as important as those needs are.

1 See Training America, Strategies for the Nation, 1989.
The New Consensus

In the first half of the decade of the 1980s there was a spate of surveys of employers, asking them what they wanted entry workers to be like. They were carried out by most all of the major employer organizations, as well as by others. These are capsuled above.

By about the middle of the decade there began to emerge some systematic inquiry into the nature and type of learning and knowledge achieved in our classrooms as they contrasted to the needs in workplaces...as well as in other life setting (e.g. the NAEP household assessment, Literacy: Profiles of Americas' Young Adults). This was the period when the education reform movement was rebuilding the foundations of education...which had fallen into disrepair during the prior two decades. As this effort succeeds, the opportunity is created for raising our sights, and paying greater attention to the critical matter of the readiness of the workforce. The dialogue necessary for constructing an Employment Readiness Profile should contribute to refining objectives and achieving consensus.

From about mid-decade what was known about employers' views and behaviors, the greater involvement of the business community in education, and the pressure of international competition combined to express a drum beat of messages to the public and to educators. Extracts from several of the important reports are provided below:


"At one time, employers were fairly confident that a high school diploma meant a potential employee had acquired skills, knowledge, and behavior that would be useful in the workplace. Because of the decline in educational performance and discipline in recent decades, business can no longer assume that young people graduate from school adequately prepared to read, write, reason, calculate, communicate, or accept responsibility..."

- "First, for entry-level positions, employers are looking for young people who demonstrate a set of attitudes, abilities, and behaviors associated with a sense of responsibility, self-discipline, pride, teamwork, and enthusiasm.

- Second, employers put strong value on learning ability and problem solving skills.

- Third, employers do not think that the schools are doing a good job of developing these much-needed abilities."


This report resulted from the Panel on Secondary School Education for the changing Workplace, published by the National Academy Press. It defined what it thought were the core competencies:

- Command of the English Language
- Reasoning and Problem Solving
The Panel went into some detail about what it meant by each of these.


"In addition to the traditional 'three R's,' business seeks young workers with the fourth 'R' workforce readiness, which includes thinking, reasoning, analytical, creative, and problem-solving skills and behaviors such as reliability, responsibility, and responsiveness to change."


Referring to emergence of new decentralized institutions, the report said:

"Employees in those institutions need high levels of basic skills. They must have personal management skills to maintain self-esteem, set goals, and be motivated. To participate as full members of autonomous working teams, they need high levels of interpersonal teamwork, negotiation, and organizational skills — skills that enhance group effectiveness — as well as leadership skills."


"The autonomous employees in the brave new workplace require substantially greater skill than their predecessors. They need self-management skills. They need interpersonal and communication skills to interact with customers, superiors and teammates successfully."

***

These are all variations on the same theme. The list of skills from any one of these reports could be a starting point for developmental work on an Employment Readiness Profile. For this purpose, we will use yet another publication whose aim was a distillation of what employers and employer organizations are saying. It is *Workplace Basics: The Skills Employers Want*, written by the American Society for Training and Development (ASTD) and sponsored by the US Department of Labor. The publication is an overview of the results of a two-year research project. The report says that ASTD settled on seven skill groups. The skills employers want are:

- 3R's (Reading, Writing, Computation)
- Learning to Learn
- Communication: Listening & Oral Communication
Creative Thinking/Problem Solving

Interpersonal/Negotiation/Teamwork

Self Esteem/Goal Setting-Motivation/Personal & Career Development

Organizational Effectiveness/Leadership

Other employer groups might change a few of the words, but it is unlikely they would make basic changes. These seven skills, and the ASTD description of them, would be a good starting point for the development of an assessment.

An Employment Readiness Profile

We are not here proposing a new instructional pedagogy nor a revised curriculum in the schools. What we are proposing is to regularly assess a sample of students (and other youth) to profile the extent to which they have "the skills employers need." This says nothing about how such skills should/can be imparted. Neither is there any implication that the return to an academic core, as advocated by the educational excellence movement, was the wrong direction to go; the employing community has been very supportive of these reforms, and many employers served on the panels and study commissions which brought them about.

Neither does the call for all assessment of "employment readiness" involve prejudgment of who is responsible for imparting these skills. While there is a presumption in some of these reports that this is a school responsibility, this is a decision to be made by educational policy makers and public officials, not employers; however, everyone will need accurate information about what employers need, and what the economy needs. As stated above, education has broader purposes than employment preparation, as important as that role is. Also responsible for youth development are the family, the community, and the employers who hire the young people. The dialogue that develops over the construction of an Employment Readiness Profile, and the interpretation of its results, should help sort out these respective responsibilities, as well as establish the state of employment readiness, and how it is changing over time.

While there are a lot of issues of appropriate concern in creating a productive workforce, we are here addressing only the formal assessment of outcomes, and periodic checks with employers to identity changes in needs.

The creation of objectives and exercises for such an assessment would be overseen by panels drawn from the employing community, as well as the education community, with subject matter experts participating. The resulting materials would be subjected to an extensive consensus process involving employers, employer organizations, labor market experts and educators. Such panels would also be involved in designing approaches for the interpretation and reporting of the results.

The assessment could be administered to a sample of 8th- and 12-graders (and 13 to 17-year-olds), establishing a baseline the first year and describing in understandable terms a profile of current performance. In should be administered as well to samples of dropouts, as well as of enrollees in "second chance" programs, such as OICs of America and 70001, and young military recruits if there is interest in the Department of Defense to do so. The central purpose, however, should remain unclouded, to profile the employment readiness of youth emerging from the schools. Future assess-
ments would track progress against this baseline. The results of the first assessment would be the basis for a national symposium to examine their implications for future efforts by both educators and employers, and would commence a dialogue that would lead to larger agreement on objectives, or to greater understanding of the separate roles and objectives of schools and employing institutions. Since some important employer objectives may not coincide with the necessary priorities of the schools, a discussion could then proceed as to how these specific objectives can best be met through employer initiatives.

While new exercises would have to be created for the assessment, existing materials would be screened for inclusion, capitalizing where possible and desirable on development work already done (such as in the three literacy scales developed by the National Assessment of Educational Progress). Much more work has been done than might be supposed. For example, NAEP has assessed "listening" skills in at least one state. The Consortium on Education for Employment, composed of seven national associations, conducted an extensive review of these matters and concluded in Recognizing Learning Outcomes for Employment that "methodologies for assessing employment-related competencies have been developed and are ready to be used for a variety of purposes..."

The first phase could be the creation of a Design Project, guided by a Committee on the Employment Readiness Profile, composed of employer representatives and supplemented by educators and labor market experts. The broad societal consensus that such a problem exists and that action needs to be taken suggests that a dialogue now between employers and schools would be both feasible and useful. It would also be timely from the standpoint that there is serious thinking going into "restructuring" schooling, and while there are many considerations involved in restructuring, we are in a period of openness about the youth development enterprise and how we are to meet important national objectives.
Conclusion

This report concerns what the author believes is a growing consensus on the skills employers need in the workplace. This consensus is believed to be a substantial foundation on which to develop a profile of these skills...and an assessment which would supplement current assessments of achievement in regular academic subjects. I have called this an Employment Readiness Profile, and it would be administered to a sample of students and school dropouts. While considerable developmental work, as well as pilot testing, would be required, it is believed to be a feasible venture if developed and guided through a consensus process...with considerable employer involvement...of the kind which has long been used by the National Assessment of Educational Progress.

Such a Profile is advanced because of the critical need to know the state of preparation of the workforce, and how this changes over time. It is also believed that the dialogue required for the development and construction of the Profile will be constructive in developing agreement on measures for improving the preparation of young people, and in defining the roles of schools and employers in doing so.

In the United States, to a greater degree than in most developed countries, there has been a failure to mesh the schooling and working periods of life, leaving a gap that those who do not go the college route often find difficult to close. Joining together in the development of a measure of employment readiness, educators and employers could take a large step in closing that gap, and at the same time creating a workforce with more of the skills needed to meet the tough challenge of world competition.
Appendix A : Notes on Validity

When a national indicator is developed, what constitutes validity? Reviewers who are in the testing business, industrial psychology, or educational measurement think immediately of the kind of validity studies used for "gate keeper" or employment selection tests. A traditional study would validate by correlating test performance with actual job performance.

But the Employment Readiness Profile is not for use with individuals, nor is it meant for establishing qualifications for any particular job or occupation; the individual employer does that, using commercial, standardized tests as desired.

The Profile is designed to help the nation gauge the fit between the labor supply it is producing and the needs the economy has for entry level workers (as well as those who can progress to more responsible positions). What makes such a national indicator "valid?"

Indeed, how do we know that the national unemployment rate is a valid indicator? All we know is that a broad consensus was developed over the definition of a) the "labor force" and b) persons "employed." In this particular consensus it was also agreed that the difference between the count of the two would be the "unemployed," those who were "looking for work" during the survey week and unsuccessful in finding it. The consensus did not come easily, and while this consensus is broad enough to sustain a time series, it is sporadically under attack, by those who believe it understates unemployment and those who believe it overstates it.

For quite a while now, the US Bureau of Labor Statistics has published alternative constructions, while staying with an "official" rate. And from time to time, Presidential commissions are created to examine issues which arise.

Research is continuous, in and out of government, on labor force measures, and special experimental samples are used to test effects of the modifications in definitions. In the final analysis, it is the people involved, and the processes used, which create confidence, and therefore the validity of the measure.

The analogy is far from perfect, but it is, I believe, a useful one. Confidence in an Employment Readiness Profile would rest, I believe, on the following conditions being met.

1. There should be a synthesis of surveys of employers specifications. The major surveys of what employers say they want entry employees to be like are identified in this paper. There are more similarities than differences, and many differences are due to the differences in the questions that were asked, and the way they were asked.

2. In the validation of employment selection tests and criteria, many job based studies over many years have identified factors associated with job performance that go beyond "aptitude" testing. These should be drawn upon in addition to asking employer hiring...
agents what factors are important to them.

3. The materials produced in (1) and (2) should be summarized in a form usable by a design committee that would initiate development of the Profile. The committee is described elsewhere.

4. The work of the Committee should receive broad review, with revisions made on the basis of those reviews.

5. Instruments selected or developed should be field tested.

After the Profile has been defined and instruments developed to create the data for a profile, it could be subjected to at least the following confirmation studies:

a. It would be given to a group of 18 year olds who would also be interviewed by a range of employing organizations, that would rate them for suitability using techniques they would normally use for hiring. Position on the Profile should be related to rankings given by employers.

b. A follow-up of students whose Profiles had been established could be related to measures of relative success in the labor market for a specified period after entry.

It would be highly desirable to collect Profile information on a test sample for several years, while studies such as those above were carried out and an opportunity provided for the Design Committee and its consultants to review the data and commission analyses that would enable refinements to be made.

It will be important to keep in mind that this Profile is an indicator, based on samples of students, and not a selection instrument to be used on individuals for specific jobs. Nevertheless, some means must be used to achieve consensus that the indicator measures reasonably what it is intended to measure, and that it has utility for assisting in judgments about the changing employment readiness of the cohorts of young people entering the labor force from high school (or from "second chance" programs and institutions).

Such a measure would inevitably fall short of achieving complete agreement on its construct and utility, but continued use and analysis should move it farther in that direction. The debate itself will help clarify what constitutes employment readiness in the minds of employers, educators, parents and students.
Appendix B: Publications Cited


As Other See Vocational Education: A Survey of the National Association of Manufacturers, National Center for Research in Vocational Education, 1982.


School Priorities: A View From the Workplace, R. M. Peterson, Far West Laboratory, 1983.


