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AUTHOR Schmidt, B. June; Finch, Curtis R.; Moore, Margaret
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ABSTRACT

This study identified vocational and academic teachers' involvement in and contributions to school-to-work (STW) transition. The Ethnograph software was used to code and group information from interviews with 199 teachers, counselors, administrators, employers, and community members at 11 sites. Ten teacher activities that contribute to STW success were identified: involving students in workplace experiences; helping them understand the workplace; involving workplace representatives in curriculum and instruction; providing workplace experiences for students through school activities; including a workplace focus in instruction; learning about the workplace to improve teaching; working in the workplace; initiating and maintaining contact with employers and the community; designing classroom experiences around workplace expectations; and following up students. Twelve characteristics teachers need to conduct successful STW programs were found: understand and meet students' needs; establish and maintain relationships with the workplace; know the workplace; communicate effectively about STW programs; be adaptable and open to change; demonstrate positive attitudes toward work; be professional in appearance and conduct; apply school learning to the workplace; know schools and schooling; be knowledgeable and competent in teaching area; be creative and innovative in teaching; and be committed to teaching. Implications for target groups were developed. (Appendixes contain 11 references and community profiles.) (YLB)

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B. June Schmidt
Curtis R. Finch
Margaret Moore

Virginia Polytechnic Institute and State University

National Center for Research in Vocational Education
University of California at Berkeley
2030 Addison Street, Suite 500
Berkeley, CA 94720-1674

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Related Readings from NCRVE

for **Integrating Academic and Industry Skill Standards** (MDS-1001)

by Thomas Bailey

Making Sense of Industry-Based Skills Standards

Industry-based skill standards are a central part of the effort to link schooling more closely to the changing needs of the workplace. This report evaluates 22 skill standards pilot projects and makes recommendations for future developments. Bailey and Merritt suggest we pay more attention to long-term goals of increasing the learning that takes place on the job, and helping move workplaces towards high-performance work systems. They recommend that we develop broader, more professional skill standards for all jobs, and that special care be taken to establish meaningful partnerships between employers, workers, and educators. This detailed study will be useful to everyone interested in the skill standards movement. By T. Bailey, D. Merritt.
MDS-777/December 1995/$7.00

Workplace Skills in Practice: Case Studies of Technical Work

Many believe that a "skills gap" threatens American productivity because students are not taught the generic skills of problem solving, decisionmaking, communication, and teamwork required in the new competitive business environment. The authors of this study test this belief by examining four diverse firms to see what skills and work attitudes are actually required. The study confirmed the importance of these skills, but also found that they vary considerably with work context in ways ignored by public policy. The authors noted that firms lack effective strategies for acquiring needed skills in their workforce, and that they do little to foster skill development among nonmanagerial workers. These instructive case studies will interest employers, industry groups, and policymakers, as well as educators involved with school-to-work transition issues. By C. Stasz, K. Ramsey, R. Eden, E. Melamid, T. Kaganoff.
MDS-773/May 1996/$12.50

Improving Performance Measures and Standards for Workforce Education

A recent NCRVE study of the effects of Perkins II (*Improving Perkins II Performance Measures and Standards: Lessons Learned from Early Implementers in Four States*, MDS-732) found that the performance measures and standards provisions designed to promote program improvement were not achieving their full potential. This report examines the implications of that research for enhancing accountability in future federal workforce preparation legislation. It also illustrates specifically how the language of Perkins II could be changed to carry out the recommendations of the earlier study. By B. M. Stecher, L. M. Hanser, M. L. Rahn, K. Levesque, S. G. Klein, D. Emanuel.
MDS-821/May 1995/$5.50

EXECUTIVE SUMMARY

Overview and Focus

Most teachers' current experiences with school-to-work transition are school-based and thus have not included ways that meaningful linkages can be created so students may be assisted in transitioning from school to work. Deep-rooted tradition has led many teachers to view school-based learning as separate from work-based learning. To meet the school-to-work goal of moving from isolated programs to a system that helps large numbers of students successfully transition to work, all school personnel must understand, support, and be actively involved in the effort. To meet this challenge, educators in general and teachers in particular must be provided with opportunities to gain school-to-work related knowledge, instructional expertise, and associated attitudes needed to collaborate in effective ways with employers and the community. Unfortunately, little is known about what teachers must do if they intend to be successful in school-to-work transition settings. As more and more teachers become actively engaged in school-to-work efforts, it is important to know what characteristics they must have and what involvement they should have to make meaningful contributions to students' school-to-work transition.

This study focused on teachers within the context of school-to-work transition. Since successful school-to-work transition can demand a different set of teacher responsibilities than has been the case with traditional education, we posited that teachers engaged in school-to-work transition activities would have a wide range of new and different responsibilities. We thus sought to identify and delineate vocational and academic education teachers' involvement in and contributions to school-to-work transition. Two questions served to further guide our research:

1. What teacher activities contribute to school-to-work success?

2. What characteristics must teachers have to conduct successful school-to-work programs?

Procedure

Information about teacher involvement in and contributions to the facilitation of school-to-work transition was gathered through community profile studies. Since effective school-to-work transition must emphasize school-based learning, work-based learning, and linkages between the two, it was felt to be important that information be gathered from workplace and community representatives as well as educators. In order to establish a broad information base, it was important that persons from the education, workplace, and community subsets of each site be able to provide their respective views and perspectives.

Nominations for community sites were sought through requests made to state school-to-work coordinators throughout the United States. Other officials were contacted based on information identified in the literature about ongoing school-to-work activities in their states. The eleven community sites in eleven different states that were ultimately selected to participate in the study reflected a range of settings from rural to suburban to center city. At these sites, the types of educational institutions we visited ranged from comprehensive high schools to secondary technical centers and technical colleges. At all the locations, schools were actively engaged in school-to-work transition activities and were closely linked with the workplace and the community.

Information was gathered at the sites through interviews with teachers, administrators, counselors, employers, and community representatives. The primary information collection approach was the long interview, with a total of 199 persons interviewed at the eleven sites. Included in the interview protocols were questions and probes designed to assist interviewees in identifying and describing best school-to-work practices teachers had used, including those where teachers worked effectively with employers. The critical-incident technique was utilized in the protocols to assist interviewees identifying and describing teachers' best practices at each site. Analysis centered on identifying meaningful themes associated with teacher school-to-work involvement and contributions that were imbedded in the interview text. To handle the extensive text transcribed from the interviews, *The Ethnograph* software was used. This software assisted us as we coded, grouped, coded again, and regrouped information according to established and emerging themes.

Teacher Activities that Contribute to School-to-Work Success

Each interviewee was questioned about vocational and academic teacher involvement in school-to-work activities. Interviewees were asked to identify teacher school-to-work activities that linked with the workplace; and also to describe one of those activities that made the greatest contribution to student school-to-work transition. Since the persons interviewed consisted not only of educators but business, industry, and community representatives; it was anticipated that a wide range of teacher activities would be discussed. Examination of teacher activities that were mentioned by interviewees resulted in the formation of several meaningful teacher activity themes, each of which offers insight into the range of school-to-work activities that should receive teachers' attention. The following ten themes were identified:

1. Involving Students in Organized Workplace Experiences
2. Helping Students To Understand the Workplace
3. Involving Workplace Representatives in School Curriculum and Instruction
4. Providing Workplace Experiences for Students Through School Activities
5. Including a Workplace Focus in School Instruction
6. Learning about the Workplace in Ways that Contribute to Better Teaching
7. Working in the Workplace
8. Initiating and Maintaining Contact with Employers and the Community
9. Designing Classroom Experiences Around Workplace Expectations
10. Following up on Current and Former Students

Characteristics Teachers Need To Conduct Successful School-to-Work Programs

Interviewees were also asked to describe what characteristics teachers must have to be most successful at organizing and conducting school-to-work programs. To clarify the question, we asked interviewees to describe knowledge, attitudes, and competencies that

would help teachers in their school-to-work efforts. As might be expected, the interviewees had a variety of opinions and discussed a broad range of characteristics that we organized into twelve different themes, with two of the them having subthemes. Interviewees not only named the characteristics, but they also provided insight as to why the characteristics are important for teachers. The twelve themes and the subthemes follow:

1. Understand and Meet Students' Needs
    - Accepting Students
    - Valuing Students
    - Developing Students as Individuals
    - Establishing Working Relationships with Students
2. Establish and Maintain Relationships with the Workplace
3. Know the Workplace
    - Understanding the Workplace
    - Having First-Hand Knowledge of the Workplace
4. Communicate Effectively about School-to-Work Programs
5. Be Adaptable and Open to Change
6. Demonstrate Positive Attitudes Toward Work
7. Be Professional in Appearance and Conduct
8. Apply School Learning to the Workplace
9. Know Schools and Schooling
10. Be Knowledgeable and Competent in Teaching Area
11. Be Creative and Innovative in Teaching
12. Be Committed to Teaching

Discussion and Implications

Our results support the need for both vocational and academic teachers to be well-prepared for conducting school-to-work transition activities. Not only must teachers be skilled at teaching but they should also be able to forge and maintain linkages between the school and the workplace. When we sought to align teachers' activities that contribute to school-to-work success with the characteristics they need to conduct these activities, we soon found that the task was complex. Employing a matrix, we identified teacher characteristics that contribute to each of the activity areas. To do this, we selected and described those characteristics that had the best fit with each of the ten activity areas. The matrix offers more detailed information about the knowledge, attitudes, and competence teachers must have to be effective contributors to students' school-to-work transition.

The study results have implications for four target groups: (1) practicing teachers, (2) prospective teachers, (3) administrators, and (4) persons in the workplace. Practicing teachers of both vocational and academic subjects can benefit from examining the findings and assessing their own knowledge, attitudes, and competence through comparison with what is needed for school-to-work transition success. Essential teacher characteristics and examples of their use can serve as a model for professional development. By reviewing the statements made by interviewees, teachers should gain insight about how they can establish and maintain positive relationships with workplace representatives, how they can simulate workplace experiences in their own instruction, and how they can help their students gain first-hand knowledge about the workplace. Teachers will also find extensive support for the importance of work in students' lives and the valuable contributions work experiences can make to each and every student.

Prospective teachers can also benefit from the study findings. Teacher educators can use the discussion matrix to orient prospective teachers so they learn about important school-to-work activities. Discussion can help prospective teachers learn about characteristics they will need to conduct school-to-work activities successfully. Interviewees' comments provided in the findings can serve as the basis for developing role-playing situations where prospective teachers practice use of the characteristics in ways that they might be applied in actual school-to-work settings. Through role-playing, prospective teachers can determine why some behaviors may be perceived as both helping and hindering school-to-work efforts.

Administrators who review the findings and accompanying discussion should quickly recognize the importance of involving all teachers in school-to-work activities and providing school-to-work opportunities for all students. It is particularly important for administrators to provide opportunities for teachers to interact with persons in the workplace. In addition, administrators need to provide opportunities for teachers to work in professional teams, especially teams that include workplace representatives. As the findings reveal, successful school-to-work programs require the commitment and cooperation of all school personnel.

Persons in the workplace should gain insight into the complexities teachers confront when conducting school-to-work activities. For example, among the concerns stated by workplace representatives was that teachers focused only on their own subject matter and did not have a realistic perspective regarding today's and tomorrow's workplace. This concern may be reduced if persons from the workplace have greater contact with educators and education. It is also important that persons in the workplace who will collaborate with school-to-work efforts learn about teachers' concerns regarding school-to-work transition and understand how they can help teachers to conduct successful school-to-work activities. The opinions of workplace representatives and the roles they play in implementing school-to-work transition are critical to the success of this important reform.

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OVERVIEW AND FOCUS

Passage of the Carl D. Perkins Vocational and Applied Technology Act in 1990 (Perkins II) ushered in a new era of preparing students to enter and succeed in the workplace. Among other things, the Perkins II legislation shifted emphasis from a reactive and rigid curriculum and instructional model to one that is proactive and flexible. In contrast with earlier legislation that contributed to a wide separation between vocational and academic instruction, Perkins II supported integration of vocational and academic studies. Also included in Perkins II were provisions for linking high school and post-high school studies in creative ways through Tech Prep (a combined secondary and postsecondary program in a technical area that leads to a two-year associate degree or a two-year certificate). (ERIC Clearinghouse on Adult, Career, and Vocational Education, 1996). This landmark legislation appears to have had positive and meaningful impact on students; however, it has also provided educators with many different implementation challenges.

The School-to-Work Opportunities Act of 1994 expanded on Perkins II's proactive elements by allowing states to combine federal education and job training program dollars so more meaningful school-to-work activities could be provided. In order to receive funding from the School-to-Work legislation, programs are required to include three components: (1) school-based learning, (2) work-based learning, and (3) connecting activities that link school- and work-based activities. The School-to-Work Opportunities Act is seen by many as legislation that "brings it all together" to form a powerful system. And since school-to-work involves educators and business, industry, public service, and community representatives in running the system, the organization, articulation, and collaboration activities can be daunting. This is especially true for educators in general and teachers in particular (Finch, 1997, pp. 72-73).

To make the changes emphasized in school-to-work transition legislation, schools must become places where responsibility is accepted for integrating work-related learning into the curriculum, as well as methods, materials, and strategies that support this learning. As Ryan and Imel (1996) noted,

> Educators and the business community must move the school-to-work agenda forward, as educators alone cannot implement effectively the school-to-work vision. In fact to give all students the opportunities that a broad school-to-work movement can create, the involvement of civic organizations and many other groups will be critical. (p. 10)

Employers must be invited to become partners in the school-to-work transition process. And the increased emphasis on linking schools and workplaces infers that educators should have an expanded set of roles and responsibilities. Historically, some educators have and continue to link with employers through various means including advisory committee activities, placement of cooperative students, school-based enterprises, career academies, actual work experience, and business and industry tours and observations. With the current Tech Prep and curriculum integration movements, some vocational and academic teachers and guidance counselors have had opportunities to interact with employers in various ways. Most teachers, however, do not perceive students' transition from school to work as an integral part of their teaching and give little or no effort to interfacing with employers. Kazis and Barton (1993) indicate that linking school and work will require extensive teacher professional development to provide teachers with the knowledge and skills needed to build programs with work-related experiences as well as new methods of assessment that will help students transition to work.

Thus, most teachers' current experiences are school-based and have not included ways that meaningful linkages can be created so students may be assisted as they transition to work. Deep-rooted tradition has led to school personnel viewing school-based learning as separate from work-based learning. The challenge, then, is to provide all teachers with opportunities to gain occupational-related knowledge, instructional expertise, and associated attitudes needed to interface effectively with employers (Pauley, 1994). To meet the school-to-work goal of moving from isolated programs to a system that helps large numbers of students successfully transition to work, all school personnel must understand and actively support the effort. As Stern, Finkelstein, Stone, Latting, and Dornsife (1994) note, "Within schools, major decisions must be made about the curriculum of school-to-work programs." They continue, "Building integrated school-to-work programs for large numbers of students will require the active collaboration of non-vocational teachers and departments" (p. 143).

This study focused on teachers within the context of school-to-work transition. Since successful school-to-work transition can demand a different set of teacher responsibilities than has been the case with traditional education, we posited that many new responsibilities would exist for teachers who are engaged in school-to-work transition activities. We thus sought to identify and delineate vocational and academic education

teachers' involvement in and contributions to school-to-work transition. The following questions served to further focus our research:

1. What teacher activities contribute to school-to-work success?

2. What characteristics must teachers have to conduct successful school-to-work programs?

PROCEDURE

Information about teacher involvement in and contributions to the facilitation of school-to-work transition was gathered through community profile studies. Since effective school-to-work transition must emphasize school-based learning, work-based learning, and linkages between the two, it was imperative that information be gathered from workplace and community representatives as well as educators. In order to establish a broad information base, it was important that persons from the education, workplace, and community subsets of each site be able to provide their respective views and perspectives. In the selection of community sites that would participate in the study, the following criteria were used:

- the extent and effectiveness of school-to-work linkages and other involvement between schools and employers
- the extent to which school- and work-based programs are fully operational and graduating students from these programs
- documentation of the long-term commitment that schools, employers, and the community have made to school-to-work transition

Nominations for sites were sought through requests made to state school-to-work coordinators from across the United States. Other officials were contacted based on information about ongoing school-to-work activities in their states that were identified in the literature. The eleven community sites in eleven different states that were ultimately selected to participate in the study reflected a range of settings from rural to suburban to center city. At these sites, educational institutions we visited ranged from comprehensive

high schools to secondary technical centers and technical colleges. At all the locations, schools were actively engaged in school-to-work transition activities and were closely linked with the workplace and the community. Further information about the various community sites is presented in the appendix.

At each of the sites, information was gathered through interviews with teachers, administrators, counselors, employers, and community representatives. These were individuals involved in school-based learning, work-based learning, and activities linking school-based and work-based learning. The primary information collection approach was the long interview, with a total of 199 persons interviewed at the eleven sites. The distribution of interviews was as follows:

- 30 school and school district administrators
- 25 academic subjects teachers
- 47 vocational subjects teachers
- 13 school guidance counselors
- 25 school-to-work and vocational education coordinators
- 42 business and industry representatives
- 17 community representatives

Included in the interview protocols were questions and probes designed to assist interviewees in identifying and describing best school-to-work practices teachers had used at each site, including those where they worked effectively with employers. The critical-incident technique (Flanagan, 1954) was utilized in the protocols to assist interviewees in describing examples of teachers' best practices. After the teacher, other educator, and business/industry/community protocols were drafted, we used them to interview several persons who were representative of those to be interviewed in the study. Based on this pilot use, minor changes were made to the protocols. As we began to interview people at the various sites, we found that minor revisions to protocol wording could improve the information gathering process. Based on our field experience, these changes were made to the protocols.

Following the recommendations of Hammersley and Atkinson (1983) and Miles and Huberman (1984), analysis began when the study was first being conceptualized and continued during protocol development and the interview process. However, analysis ultimately centered on identifying meaningful themes associated with teachers' school-to-work involvement and contributions imbedded in the interview text. It also gave consideration to the extent that aspects of these themes existed across sites. To handle the extensive text transcribed from the interviews, *The Ethnograph* software (Seidel, Kjolseth, & Seymour, 1988) was used. This software assisted us as we coded, grouped, coded again, and regrouped information according to established and emerging themes. To establish start lists of potential themes, we independently coded text for successive groups of interviewees from the first two community sites we had visited. After text for a small group of interviewees was coded, we compared our coding, discussed coding differences, and added and/or deleted themes based on mutual agreement. Successive rounds of coding and group discussions resulted in a meaningful start list of themes and descriptors related to these themes. When agreement was reached on the start lists, text for each remaining interview was independently coded by two of us and then we shared it with each other. Any differences in coding were discussed and coding changes were made based on mutual consensus.

TEACHER ACTIVITIES THAT CONTRIBUTE TO SCHOOL-TO-WORK SUCCESS

Each interviewee was questioned about vocational and academic teacher involvement in school-to-work activities. Interviewees were asked to identify teacher school-to-work activities that linked them with the workplace; and second, to describe one of those activities that made the greatest contribution to student school-to-work transition. Since the persons interviewed consisted not only of educators but also business, industry, and community representatives, it was anticipated that a wide range of teacher activities would be discussed. Examination of teacher activities that were mentioned by interviewees resulted in the formation of several meaningful teacher activity themes, each of which offers insight into the range of school-to-work activities that should receive teachers' attention. The following are the ten themes identified:

1. Involving Students in Organized Workplace Experiences

2. Helping Students To Understand the Workplace

3. Involving Workplace Representatives in School Curriculum and Instruction

4. Providing Workplace Experiences for Students Through School Activities

5. Including a Workplace Focus in School Instruction

6. Learning about the Workplace in Ways that Contribute to Better Teaching

7. Working in the Workplace

8. Initiating and Maintaining Contact with Employers and the Community

9. Designing Classroom Experiences Around Workplace Expectations

10. Following up on Current and Former Students

Examples of teacher activities associated with each of the ten themes appear in Table 1. Selected comments made by interviewees serve to highlight the scope of each theme.

Involving Students in Organized Workplace Experiences

This theme focused on business and industry experiences that teachers, both individually and as members of teams, planned and arranged for their students. These experiences were of an active, hands-on nature. In other words, students were participating learners in the work environment. Teachers engaged their students in a wide variety of on-the-job experiences, including mentoring, shadowing, interning, cooperative work experience, and youth apprenticeship. Even though some teachers did not involve their students in these types of on-the-job experiences, an administrator at one high school was quick to point out that all their teachers were expected to be in contact with their students who were in the workplace:

> . . . every one of our teachers here also has students on internship placements. And although we have school-to-work support in the form of coordinators and job coaches, the teachers themselves also visit the businesses. We like them to make physical contact with every student in an internship setting at least once a month.

Table 1

Teacher Activities that Contribute to School-to-Work Success

Contributors to Success	Examples
Involving Students in Organized Workplace Experiences	Students shadowing and mentoring in the workplace Students engaged in cooperative work experiences Students interning in the workplace
Helping Students To Understand the Workplace	Students taking field trips to business and industry Teachers completing internships in the workplace
Involving Workplace Representatives in School Curriculum and Instruction	Advisory committees providing curriculum recommendations Guest speakers presenting information about the workplace
Providing Workplace Experiences for Students Through School Activities	Students completing design projects for local industries Students building houses in the community Students catering business luncheons
Including a Workplace Focus in School Instruction	Teachers providing applied lab instruction Teachers providing applied academic instruction Teachers integrating curriculum and instruction
Learning about the Workplace in Ways that Contribute to Better Teaching	Teachers completing internships in the workplace Teachers working part-time in industry
Working in the Workplace	Workplace experience through summer jobs Part-time jobs in industry
Initiating and Maintaining Contact with Employers and the Community	Formal and informal contacts with employers Promoting the school and school programs Providing assistance to employers and the community Establishing linkages and partnerships
Designing Classroom Experiences Around Workplace Expectations	Planning classroom activities to meet workplace expectations Using "real world" examples in teaching
Following up on Current and Former Students	Placement and evaluation of current students Following up program graduates

A number of interviewees commented on the value of involving students in organized on-the-job experiences. A manager of a large supermarket discussed how he viewed students' on-the-job experiences as helping them to develop. He indicated that most of the students who come to him were getting ready for their first jobs and were "nervous about meeting the public." The job experience "brings them out of the little shells they are in and they learn how to communicate and how to be more polite to people." A supervisor in a manufacturing firm provided several insightful comments about a youth apprentice program's positive impact on students:

> Well, of all the [students] in the apprentice program, I think we made offers to almost all of them. There were a couple of exceptions. Those who didn't accept employment with us and those that we didn't offer employment to left here with a much better idea of what the work environment was going to be. They got a taste of what they were going to have to do once they got out of school and had a greater feel for how to interact with their superiors and what kinds of interactions there are between the workers on the floor, purchasing, engineering, parts, and human resources because they were actually in the workforce. They were dealing with all of those functions so they got a much broader view of what manufacturing is all about than they could ever get in the classroom.

An employee of a company at another site we visited commented on the value of on-the-job experiences for students:

> They point out [the students'] weaknesses and deficiencies in a positive way. They [the students] need to learn and I try particularly hard to put it as a learning experience. I don't . . . come out and say that you're dumber than a box of rocks. I usually come out and say I need help in this area and now how can you help me?

Some interviewees commented about student on-the-job experiences through cooperative education (e.g., marketing and business education). However, student involvement was not limited to these areas. One state department of education official in the state where the school is located discussed student involvement with youth apprenticeship in a very large corporation, indicating that

> As for the cooperative work experience teachers, the biggest difference I think I have seen is most of [these teachers] would be working with one student and one employer or one employer and two students. In this instance [youth apprenticeship with the large corporation], we are talking about an employer willing to hire 100, 200, or 300 students.

In many of the sites we visited, teachers worked with others in getting all students in the school (and in one case the entire school district) out into the workplace for shadowing and mentoring experiences. A social studies teacher who taught in an urban high school described the complexities of such a massive effort as follows:

> Right now for next year, [the coordinators] make contacts out in the workforce, get volunteers from the businesses, and approach them to come over and sponsor a student because the bottom line is we want money for scholarships. If [a fast food corporation] or a law firm would sponsor a kid and then in the summer let that kid come and work in the law office, down the road [the businesses] can see the benefit that we are turning out students they can use as employees. We pick the people, get them here, match them with the kids, and then . . . biweekly or monthly, the kids go out and spend time with the mentor. The mentor comes to the school, spends time with the kids, and gets to build a relationship. [So the student has] someone to look up to, someone to emulate; and if the kids are in fields where this is really where they want to work, [it is] a good step in the right direction. Opens doors.

Collectively, the workplaces where students shadowed, interned, apprenticed, and were mentored reflected a broad sampling of business, industry, and community employers. Manufacturing, service, retail marketing, sales, and community service agencies were but a few of the many workplace areas where students learned. But even though the workplaces varied from location to location and the local organizational structure might be quite different from one part of the country to another, it was clear that both vocational and academic teachers had major roles in involving students with meaningful, organized on-the-job experiences.

Helping Students To Understand the Workplace

This theme centered on teacher use of more indirect and passive means to aid students in understanding what the workplace is like and how it might relate to their future careers. As contrasted with students' direct involvement in workplace experiences, this teacher assistance activity included more indirect student exposure and less active student involvement. It came as no surprise that taking students on field trips to business and industry was the area most frequently mentioned by interviewees. This has been and continues to be an extremely popular and useful means of assisting students in understanding what goes on in the workplace. As a computer teacher commented,

> Well, it gives them [the students] an idea of the real world. In some places they go, they can see that you don't have to dress up but you have to wear equipment, so there would be safety devices. They can look at the ergonomics of it, the software used, the skills they would need, and when they talk to people they can get an idea that this person may basically sit a lot, or this person is on the phone a lot, or this person runs all over the place.

A science teacher also supported this view, stating that

> The kids actually get out there and get to see exactly what is going on and that there are real people out doing a job that requires X amount of education and they can actually make a living doing this. It might pay them X amount of dollars or whatever. But [the students] actually get out there and they can actually see what's going on and it kind of stimulates their interest . . . . [I]t shows them that in real life you have to know some basic science and math.

The president of a nonprofit job development organization spoke to the more comprehensive value of field trips:

> . . . what we are doing generally throughout our whole programming is not an occupation skills kind of connection with the employer. They are affective skills. [Employers] are dealing with students who are just becoming accustomed to the idea of work and who are in a sense meeting for the initial purpose of demystifying [the workplace for students].

The people we talked to described what students were exposed to during their field trips. Although each field trip had a particular business or industry flavor, trips tended to provide students with a broad overview of the business or industry operation as well as an introduction to some of the work details. For example, the general manager of a five-star restaurant commented,

> We've had teachers [bring] their students. Our chef, our manager will greet them and show them room-by-room through our particular establishment, describing for them how every station in the house is functioning and permit them, on many occasions, to observe us during a meal period so that they can see first-hand how things are working.

A social studies teacher who taught in a law and government magnet school described what students encountered during courtroom visits:

> It's a different thing when it is really happening. [The students] will call me a lot to find out if [there is] anything going on in court [for them to watch]. They do come down and they will watch the trials and different proceedings. We've taken them and introduced them to the courtroom

> personnel and the judges that sit on the bench. They really get a kick out of watching justice in action.

Field trips did not always have to involve travel to the field. A drafting teacher described how use was made of a local building site.

> This year we didn't field trip as much because we were able to hit it locally. . . . We had the new building site coming up [and] the architect whom I work for during the summer was very helpful in coming in and helping with our local contest. He sent over bid sheets and kept the students up-to-date on what we were doing there. . . . It would be what I call a field trip. We just simply didn't have to leave campus this year because we had it on site.

Another way that students were assisted in understanding the workplace included students attending various meetings, conferences, and workshops. One teacher took several students to a technical program advisory committee meeting. A different teacher took students to workshops where they could hear presentations made by professionals in the field. A business teacher indicated the value of exposing students to these sorts of activities, stating, "When they go to the different conferences and workshops, they get to hear speakers talking about things that they would not normally hear in a classroom." Commenting on a welding teacher's experience with taking students to an American Welding Society meeting, an industrial coordinator indicated that the students were able to hear

> a panel of business [persons] talk about what they are expecting in the next five to seven years in the welding industry. This way the students had an opportunity to ask any questions they wanted to the entire panel of seven different business [persons] who were either production managers or company owners.

Involving Workplace Representatives in School Curriculum and Instruction

A third theme dealt with the involvement that persons from business and industry had in the schools. More specifically, it was the direct and indirect involvement workplace representatives had with teachers that contributed to school-to-work success. The various descriptions of involvement that interviewees gave us could be distilled into several areas, including offering advice, making presentations, assessing student progress, providing resources, and making other contributions.

Offering Advice

Comments were made at every site about the advice to educators given by persons from business and industry. Most often mentioned were details about occupational advisory committees. Advisory committee members provided teachers and others with much useful input from the workplace about what should be taught as well as resources that could be utilized in school-to-work activities. A counselor spoke to the role of advisory committees in her school by saying,

> [The advisory committees are] pretty much advising the direction of the curriculum. In a way [they are] keeping the teacher in line; and I say this not that teachers should be intimidated. It's a resource for the teacher and the longer you are out of the workforce and industry, the more you're going to stray from what's currently going on. . . . That's [the teachers'] primary way of keeping in touch. It's happened where teachers have requested equipment that was totally unrealistic for what they were teaching and the advisory committee would say "you don't need that kind of equipment. It's outdated; we don't use that anymore in the industry. This equipment is what you need." [The advisory committee] is also a wonderful resource for providing internship sites for students in that program . . . almost all the advisory committee members have a vested interest in that program and are almost always willing to place students in learning experiences. So I see it as a direct follow-through of benefits to the students.

Although most vocational programs are required to have advisory committees, the actual involvement committees have with programs may vary. Some committees provided teachers with opportunities to network with others in the field. As a health occupations teacher stated,

> I guess the way [the advisory committee] links is because the people on my advisory committee are very active business people. For example, [one person on] my advisory committee is also the program coordinator and director of respiratory care services at a local hospital. She was very instrumental in putting me in contact with other rehabilitation professionals at the hospital. [Other committee members] also put me in touch with people they knew were actively involved and that were interested in student work experiences in the community.

A high school assistant principal indicated that advisory committee members made contact with the workplace easier, saying that "you always have that contact person, especially for speakers in the classroom and that type of thing."

Making Presentations

Even though advisory committee members did serve as guest speakers in classes, many other people from the workplace were also called upon to make presentations. Teachers and others felt that having persons come into the classrooms as guest speakers was of great value to students. A science teacher at one high school stated,

> . . . [the guest speakers] come in and they show the kids something different. I mean [the students] see me every day and they hear me every day. But . . . if [the students] see this person come in, especially if [the visitor is] younger and more their age, [the students] tend to listen a little bit more. They come in and tell [the students] about their jobs and what they do and some of the problems that come about with their jobs or maybe a specific area of their jobs.

A social studies teacher at another site discussed the value of having guest speakers, saying,

> I think it opens a lot of doors for students in a way that they had not thought about. A lot of them have not even thought about the many professions . . . what jobs might be available to them, and this opens some doors for them. It [has] also closed some doors because some students were really interested in doing something and they started getting some more information and then they decided that was not meant for them. So it worked both ways, opening and closing doors for them.

At one site, the local Chamber of Commerce coordinated a speakers' bureau that teachers could use to access speakers; while at another site, guest speakers could be accessed through a person who coordinated this for the entire school. However, a high school law and government magnet school teacher who had a number of connections in the legal field found it was no problem to contact potential guest speakers directly:

> We have guests in all the time. . . . I just have to call the commonwealth attorney. [This person] is coming over this coming Tuesday for [a county parent teacher conference day]. He's going to talk to all our students. . . . [A prosecutor] comes here every other week. She is supposed to leave her tapes [for use by the students] from the three trials that she prosecuted. Two of them are murder trials and the kids are always interested in that.

There were several instances where persons from the workplace were called upon or volunteered to teach students. A principal of a vocational-technical center noted that different companies "will send representatives to actually teach the class that particular day." She went on to say that companies provided engineering demonstrations to students:

"The engineers from [a fabricating company] are coming in to teach the manufacturing class next week."

At a different site, a school-to-work director who also taught classes described a creative arrangement that enabled a person from industry to provide specialized content to students in the schools.

> I have a teacher who comes in [from a manufacturing company] and gives me release time. He's a welder-machinist. He comes in every afternoon at noon and teaches the entire afternoon block for the whole week. . . . In turn, we do things for their company they can't do for themselves at a very reasonable rate.

Assessing Student Progress

It was interesting to discover at one site that business and industry representatives were actively engaged in the student assessment process. These people were asked to assess students who had been taught certain competencies and provide their views of whether or not the students were ready to use the competencies in the workplace. A restaurant manager who gave a great deal of assistance to the food management program at one high school offered her views on why the involvement of business and industry in helping to assess students' progress is so important:

> I think that the professionals have a different kind of way of viewing what the students are doing because our objectives in the workforce are slightly different from the objectives [when] the teachers are teaching [the students] things. And so we have a tendency to observe different kinds of details and offer [the students] a different kind of insight and input on what they are doing that they would not get from their teachers . . .

A counselor gave examples of how people from industry assisted various programs by assessing students:

> For instance . . . we have CAD people come in from industry and they administer the test. They [the industry people] can give the student direct feedback from their background as to whether or not the test [outcomes are] something industry standards will accept. They give feedback to the teacher [and] . . . the students. In auto service, [the teachers] like to hold the students accountable. If [the students] can't pass the industry administered performance test, they either have to revisit those things they didn't do well [on] or they cannot go on to the next level.

Providing Resources

Businesses and industries were sometimes asked if they could contribute equipment and materials to various courses and programs in the schools. However, this was not the only way that resources were obtained. Several persons from the workplace noted that their businesses and industries had made substantial resource contributions to the schools. An official in a local bank at one site stated,

> [For] the local schools here, I have purchased books. [The] schools can't always afford the training materials they need and we usually spend about $1,000 just purchasing training materials for the local teachers.

Likewise, a technical delivery representative for a major automobile manufacturer indicated that his employer had made a great number of resource contributions to a high school:

> We have donated automobiles to the school here. We are trying to get them to teach the [automobile] technology as well as basic systems. We have given [the automotive program] what we call an IVLS, which is an Intelligent Video Learning System. This piece of equipment is really a computer that has a video disc and a light pen. [The students] actually interact with the computer [and] learn brakes and engines and electronics and things like that.

A drafting teacher at the same location noted the value of using industrial prints supplied by a local manufacturing firm:

> . . . using the industrial prints . . . makes the transition from the school setting to work smoother. So the students are familiar with the work when they go out [into the workplace]. It's "Oh, look at that. I understand this. This is not too hard."

Among the various additional contributions made to different schools were a portable fast food restaurant from a fast food chain corporate headquarters, a tape library of criminal cases from a county prosecutor's office, financial planning books from an extension office, and laboratory learning packages from an electronics manufacturer. These were all put to good instructional use by teachers in the schools.

Making Other Contributions

Several other contributions were made by businesses and industries. At one site, an economic development council decided a person should be hired to assist in planning the

council's long-term objectives. The person who was hired described how the position evolved and how he was able to enhance vocational education in ways that had a positive impact on both teachers and the courses they taught:

> [The council] found that their ability to compete in the economic development arena was hindered by our weak and scattered vocational education here in the valley. They studied it for a couple of years [and] decided they needed someone from inside the system to work with them on it. So [the council] came to the school districts and college and asked if they could identify a person that was amenable to work for them. If [the council] would pay that person's salary, would the college and the school districts support the development of a plan for enhancing the vocational education profile in the community. [The council] then went through the process of selecting me.

At a different site, the vice-president of an area economic development corporation discussed how a monthly employment level report the corporation prepared was shared with educators:

> We send this [form] out to all the employers once a month. They check off how many employees they have and that type of general [information]. But on the bottom, it asks them about their employment trends and what kind of classifications they will be hiring and what kind of skills these classifications need. We share that with the high school counselors to make them aware of general trends. If there is a general trend for more nurses or [fewer] nurses or more welders or more machinists . . . it helps [the counselors] in advising students as to what careers a student may get involved in. . . . [S]ometimes the local trends are opposite of what is going on at the national level.

Providing Workplace Experiences for Students Through School Activities

Making workplace experiences available to students through school instruction has been a hallmark of vocational education programs. For years, many courses and programs have included laboratories and school-based enterprises where students can engage in applied activities that closely approximate the workplace environment. Although the benefits that can accrue from helping students to engage in workplace experiences through school activities have been well-documented (see e.g., Stern et al., 1994), an official with a large gas and electric utility company who we interviewed summarized the value of providing students with these sorts of opportunities.

> I think that the most important aspect of the whole thing is that the student can see what he or she is learning in the classroom or the work site will benefit him or her beyond his or her formal education . . . So many times the students get discouraged and drop out of school because they think what they're learning is not really going to benefit them directly. This practical application conveys to them [the relevance] in a very clear manner and I think it helps them tremendously.

Several interviewees described in some detail how teachers involved their students in school-based enterprises to provide greater workplace relevance in school settings. A coordinator at one high school described how students in building construction classes collaborated on construction projects for the community:

> All of our construction areas have projects that the boys and girls work on, either on campus or away from campus. For example, out at [one of our elementary schools] they needed some new classrooms. The electrical class, the masonry class, the carpentry class, [and] the welding class have all worked on [constructing] those classrooms. . . . If you were to go by one of those jobs you would not be able to tell whether it was a [high school] crew or whether it was a real construction crew working.

A county manager at another site was very pleased with community projects completed by high school students. He commented,

> We had a renovation of our social services building that was handled by the vocational department. The students showed up and performed the work. Completing it saved us 6 digits, probably $250,000. The auto mechanics class has refurbished a mobile command center for the volunteer firemen, saving again thousands, tens of thousands, probably 25 to 30 thousand dollars with the finished product.

Including a Workplace Focus in School Instruction

We learned that a number of teachers at the sites we visited were actively engaged in giving a workplace emphasis to their school-based instruction. One of the plausible reasons for teacher involvement may be that more and more teachers are recognizing the value of linking instruction with the workplace. An administrator indicated what was felt to be the reason for this value by saying,

> We can no longer afford, as educators, to sit in our ivory tower and be unaware of the steep change in technology and workplace issues that our business community is facing, and teach students the way we taught them twenty years ago. . . . [E]xpectations in the workplace are significantly

> different than they were 20 years ago. One of the biggest problems is that too many, far too many, educators have spent their entire lives sheltered and isolated in the educational environment.

Approaches to Workplace Focused Instruction

Several of the persons we interviewed mentioned instruction was enhanced through the use of well-recognized approaches such as including workplace-related instruction in vocational student organization activities and utilizing role-playing experiences in the classroom and laboratory. Regarding the Vocational Industrial Clubs of America (VICA), a student vocational organization, a vocational teacher commented,

> Every student and every [teacher] is involved in VICA in some way. You teach a particular skill whether it's manicuring, whether it's servicing a car, whether you are making an omelet. All these things we mention [in VICA competitions] are job demonstrations. They are jobs that actual people can do in industry. But it depends on how well you do those jobs. One thing about VICA is that it builds the confidence level of the students, it builds their self-esteem to where they are making positive choices about their careers. . . . Many of the students have not gone out of the state . . . , out of [this city], haven't stayed in a motel for a weekend, or gone to the [VICA] nationals.

Role playing has been incorporated into student vocational organizations as well as regular classroom and laboratory instruction. Commenting on DECA, a marketing student organization, a school district back-to-industry coordinator said,

> What I like about DECA . . . is that we use for real, real life things that come up in the workplace [as] for role-play activities. . . . [For example,] you've got customers, they're trying to pass off bad checks, they're on your bad check list. Now here's the store policy. How do you handle them? That's what I like.

A law and government magnet school teacher at one site emphasized how the course was linked to the workplace by mentioning,

> . . . the only thing I can stress is how my subject is related to careers that [the students] are going into. I try to incorporate a lot of things. I have debates in my class. As a matter of fact, I've even had them go down to the law library and look up laws. And then I'll set up judges and prosecution and defense and have a mock trial. Anything that I can think of that fits in with the subject area, I'll try. . . . Some of the [students] are totally unaware of what's taking place in terms of the courtroom so we do several of those a year.

Academic Teachers and Applied Instruction

A majority of the comments included in this theme focused on applied academic instruction. Speaking to their experiences with applied academic instruction, teachers of academic subjects provided several examples of their efforts in this area. A mathematics and science teacher at one site stated,

> This past semester, one of my science classes was applied physics for the people in the woods program. We did a unit on heat transfer and we found out about "R" values and how you calculate them and then how you go about looking at heat losses in a whole house. And the examples I have came from the building permit people at the city hall. You know if I was going to change my furnace or something, [this is] the information [the building permit people] would want to know before they gave me a building permit.

A physics teacher at another site spoke to the value of teaching applied academics to students in her school:

> I think it's been a real good program. . . . [W]e have a lot more students taking math and science than we would normally have, which is great. Whether [the students] are going on to a vocational field, going into a different type of area, or an academic field, I think this has [gotten] them more involved. We have students that we [would never] have thought would have ever taken . . . any more math because I had some [of these students] in the seventh grade. I know now that they are going through the Applied Math I and Applied Math II. They are taking sciences that I never thought they could have taken.

At a different site, a school board member commented about what she saw as a benefit of applied academics:

> That's what really excites me about applied academics. I think applied academics really have merit for doing just that; being able to tie mathematics to what job or career choice you are interested in.

A high school assistant principal talked about what teachers are doing to contextualize learning:

> Speech and writing, listening skills, and employability are three goals in our high school . . . Therefore, we tie the goals into industry . . . Students work in groups because . . . industry has told us that [employees] do not work individually. They work in pods or groups. So you'll find more of our classrooms where teachers are setting up activities where students have to depend on each other.

At a different site, comments made by a mathematics teacher echoed those made by the assistant principal. She said,

> Well, I think that what helps the kids is learning that they have to work together. And then when they get into the workplace, I know they are going to apply a lot of knowledge from the academics they've learned. But I think that just letting them know how to be able to communicate with people, and how to handle personality conflicts [is important]. That's really what I emphasize to the students because when they get out there later on, it's not always going to be fun.

Vocational Teachers and Applied Instruction

As expected, vocational teachers we interviewed provided numerous examples of how they applied their instruction to the workplace. Several are provided below.

A school board member's statement about how a teacher in his district applies instruction provides a useful lesson for all teachers:

> One thing does come to mind. We have a pastry chef in one of our programs who is a certified teacher but he's also spent many years as a chef out in industry. And they were able to recruit him to come in to teach. A lot of his business experience has gone into teaching that class so not only was he able to teach the kids about cooking, he was able to teach them about the restaurant environment. They actually set up a restaurant, they had meals, they had lunches for staff.

An automotive teacher in the same vocational center discussed the ways he made his laboratory environment like the real workplace. He said,

> I run my shop as close to a dealership situation as I can and if these kids left my class and went to a dealership, they would instantly see a lot of similarities [with] what I am teaching. . . . I explain to them how commission pay works, writing repair orders, the way that cars are run through the shop, looking up information, and diagnosing problems.

And finally, a health occupations teacher spoke to the ways vocational and academic courses have used a workplace focus to help her students. Through the medical examiner's office, students in anatomy and health occupations classes are able to work with the examiners:

> So [the students] are able to go there and assist with reports and they're able to actually use some of their knowledge that they picked up from anatomy and physiology. . . . We've had a lot of comments from the doctors. They

> are amazed that the students know a lot about the pathophysiology of the body. But that's where academics and my course have played a major role in helping the students.

Learning about the Workplace in Ways that Contribute to Better Teaching

At every site we visited, teachers were given opportunities to spend time in the workplace learning details about how specific businesses and industries functioned. However, each site approached the process a little differently. At some sites, formal programs were set up so teachers could intern with specific employers during the summer. At other sites, brief visits to businesses and industries were organized so teachers could be oriented to specific workplaces, find out how these workplaces functioned, and gather information that might be useful to them when they taught their classes. These visits tended to occur during the school year. At a few of the sites, teachers had several different ways available to learn about the workplace: internships, group visits, individual visits, and visits to meet with students who were interning in businesses and industries.

The Value of Learning about the Workplace

Several interviewees indicated why it was important for teachers to learn about the workplace. A human resources manager who worked for a large manufacturing firm noted,

> A lot of the teachers come right out of school into teaching so they may or may not know what goes on in a . . . business or industry. So this [experience in the workplace] gives them an opportunity to dispel some of the old myths about what happens in industry. . . . They can learn first hand and take that [information] back to the students and say "This is what the business expects you to do."

Taking a slightly different point of view, a director of a workforce development program stated,

> I think for the teacher who may have been in his or her classroom for a long period of time, the business world, the entire world is going through such changes. . . . Let's say that working my way through college I worked in a factory 20 years ago. If I went out [to that factory] today, the factory looks very different. That has had an impact on what the real world looks like . . . and it is important to share that information with students that I'm advising or teaching.

A guidance counselor offered a statement based on what she had heard from employers:

> Employers were telling us that potential [employees] did not have the skills needed in the workplace. So, to understand a little bit more about what's going on in the workplace, and [to see] how there can be an alignment of our curriculum with what's needed out in the workplace, what better way to do it than to take [teachers] out and let [them] see the types of challenges, the types of industries, and the technology.

An industrial coordinator at a different site gave a reason why their school district wanted teachers to learn more about the workplace. He stated,

> . . . if they [the teachers] could go into a business and find out the skills, the techniques, the different skill levels, that were required in a given business, then they could come back to their [classes] and not only be able to add that [content] to their curriculum but be able to field questions from their students.

Internships in the Workplace

Several persons talked about teachers taking internships in the workplace. Internship lengths varied across sites from one or two weeks to almost an entire summer. At one site, there was an active "back to industry" program that assisted teachers in learning about the workplace. A marketing teacher spoke about the role that the local Chamber of Commerce played in this huge effort:

> Let me just stress the importance of having what I call a center of influence within the community and that person is the executive director of the Chamber of Commerce. He has been very supportive of the school system in many of our activities—not just [the back to industry program]. I don't think I can overstress the importance of having someone in the community that's in touch with the business and industry people to . . . serve as that communication link.

At this same site, a public relations coordinator for a local hospital described how teachers were exposed to health care activities:

> I am assuming that [the teachers] had some say in the selection process because the ones that have been with us have been particularly interested in health care for one reason or another. [We have had] primarily science-oriented teachers, although we have had some communications [and] English teachers too. We bring these people in and talk at length about their interests and what they want to experience during the week with us. . . . [W]e have every minute scheduled for them so that they get as broad an

> experience as possible. [They] usually spend a day in a particular department [radiology, ultrasound, nuclear] and [put on appropriate clothing] and do hands-on tasks as much as possible so they are right in there seeing what happens. [The teachers] talk to staff about education requirements, [and] certification requirements, opportunities for financial growth. We saw samples of the reporting they do. They . . . keep a journal and go home daily and record their experiences in the workplace and write a report at the end. We are just really pleased and we [received] really good reports as to how valuable the time was [for the teachers].

A senior vice-president of a bank at a different site described what teachers experienced at her bank:

> I tried to get [the teachers] with the supervisors of those departments. Some days they spent maybe 30 to 45 minutes with those supervisors and then just stood back and observed. A lot of it was observing and just watching and they took notes as they went along. . . . they came to me if they had any questions and I tried to get everything answered. In fact, one [teacher] called back with more questions the next week after the program was over. She was trying to come up with a lesson plan and . . . a game plan to use the knowledge she got here at the bank.

An assistant principal of a high school at another site referred to their teacher internship program as "self-survival. [The teachers] say this as a way to help out the school but for the most part they are helping out themselves." He went on to describe the intern program saying,

> . . . there is a two-week process in which there is actually classwork involved with what the business world is looking for, with what some of the concepts are. It includes everything from what one sees on the assembly line to actually touring various facilities, as well as working hands-on with some of the workers to seeing exactly what the workers do and [what] they need to know. . . . It's one thing to read in a book that this person puts a rivet in a hole; but you also need to see where you need to put the micrometer to measure, what you need to measure, what kind of math and [other] skills are needed, what personal skills are needed, [and] what skills are needed to be an employee.

Visiting the Workplace

Teachers at some of the sites had opportunities to visit businesses and industries for short periods of time—anywhere from a few hours to a day. The visitations might be organized and coordinated by the schools or set up by and conducted by an individual teacher. A consortium administrator at one site commented on the value of what were referred to as VIP Program tours in the workplace that had been organized for teachers.

> This gives the teachers an opportunity to get into the businesses and see what is actually going on. When I was in the classroom, I did the VIP Program and it was a good way for me to go back and modify what I was doing in my classroom to meet what [were] actually the needs of the community.

A manager with a fabricating company that did not provide internships for teachers described how his employer met teachers' needs in a more informal manner.

> At our company we haven't had many teachers. In fact, we haven't had any teachers doing any kind of job shadowing or summer job experiences. We've had teachers look at the areas, if it was lasers, if it was drafting; [and] spend a couple of hours looking at what we do and take back some information, [and] possibly some parts or equipment. So they have some understanding of what we do. And the teachers that we've had out have been very excited about coming back and [are] actually talking to their students about what's going on in the workplace.

A manufacturing and welding instructor provided information about how visits were made to the workplace without the need for major coordination efforts. This instructor felt the visits were "an extremely vital and valuable part of my program and why it's so successful." He went on to say,

> . . . normally I will go in [to the company and] I like to talk to anybody from the shop foreman on up. If I can, I see the CEO. Generally, I talk to the human resources people and say "Hey, I want to come out and find out what you all are doing. I'd like to go through and see what's going on and how I can help you." Yes, I focus on how I can help them and how they can help me better prepare people for the workplace. And most of them are very happy to see me. They will spend a great deal of time and then they will take me out and introduce me to engineers or supervisors or plant managers. In fact, I am able a lot of times to give them suggestions. I went into a local business just four months ago and they were doing an operation that was relatively time consuming and I said "are you aware of this piece of equipment that is relatively new in the marketplace?" Well no, they had never heard of it, so I said "Would you be interested in knowing some more about it? I really think it could save you a lot of time and I know time is money."

Impact of the Workplace Experiences

Several interviewees indicated that experiences teachers had in the workplace were quite valuable. A business teacher commented on how spending time in the workplace changed the way business instruction was provided:

> I got really excited about [the] continuous improvement process and probably I should have known about it from some other source. But I didn't. And so I learned a whole new method of assessing what I was doing. [The people in the workplace] really stress the team approach, the value of work. And I now do everything, in every class, even keyboarding, in teams. I give team grades, not just individual grades. All that came out of that program [in the workplace]. It gave me a whole new way.

An associate superintendent at another site spoke to the impact that workplace experiences had on teachers in his school district:

> It's made many of them recognize the importance of incorporating work-based experiences in to their curriculum. It's also helped many teachers who have never been in a workplace setting [besides teaching] to understand what goes on in business and industry and what some of those requirements are. . . . [W]e have many teachers that went from college into teaching . . .

At another site, a guidance counselor spoke about how she saw teachers applying what they had learned in the workplace to their teaching:

> You can apply a real life work situation to the classroom. "Well, you know, I was out at ABC company last week and they are using this particular type of software." Students know they are getting up-to-date training. I think [the teachers] can bring what they have learned on the tours as far as what is going on [in the workplace]; maybe team concepts, working together . . .

Working in the Workplace

Some interviewees felt that teachers who had been employed in the workplace in addition to their regular teaching jobs were linking the school with the workplace in meaningful ways. This discussion centers on teacher employment other than teaching that links the school and the workplace.

Most of the comments related to working other than teaching as an activity that linked the school and the workplace came from teachers. Commenting on the benefits of working in the workplace, a drafting teacher felt that vocational teachers had a distinct advantage over academic teachers because of their workplace experience:

> I think the advantage we have over a traditional academic teacher is 99% of us have experience in the field that we're teaching in. So we know what an industry is asking for because we've done it.

However, a social studies teacher at a different school who had worked as a bank officer and an officer for a title company stated that many teachers at her high school had nonteaching work experience:

> Most of the teachers have been involved in the business world. We've had jobs just like everyone else besides just teaching. I think that has helped me more than anything else. I know how it [the workplace] changes; I learned interpersonal skills. I probably worked in the business world for about 15 years.

Although the extent to which high school teachers have had workplace experience in addition to teaching is not known, it was clear from the interviewees' comments that working in the workplace did contribute to linking school and work. For example, a transportation technology teacher said,

> I think the thing that has helped me the most personally is working in the industry this summer because when I came back and started my class [I said] "you need to learn this because I just did it this summer and this is what you've got to do if you're going to go to work." . . . I'm a professional technician and to put it bluntly if I don't do something to upgrade my skills I'm afraid that I'm going to lose them and I don't want to be a teacher. I want to be a professional technician that shares my knowledge.

This instructor went on to say that he served as a consultant with different businesses from time to time, which allowed him to directly link the workplace and the school. He indicated that

> When [the businesses] have a problem they can't figure out, they will call me and I go in as a consultant and work with them. Some of those businesses will bring their vehicles to my home and leave them with me when there is a problem they can't figure out. . . . But when I finish the vehicle, I don't just take it back; I tell them what I found and how I found it and try to turn it into a learning process for them as well as myself and that's built a lot of confidence in the community.

Initiating and Maintaining Contact with Employers and the Community

The people we interviewed shared a wealth of information about how teachers initiated and maintained contact with employers. This contact, and likewise this theme, focused on ways teachers linked with employers both formally and informally to further school-to-work transition efforts. Contacts with employers were initiated by teachers as

well as by other educators and persons in the community and the workplace. Contacts made with employers served several useful purposes: gaining information about the workplace, gaining access to employer support and resources, improving student job development and placement opportunities, providing assistance to employers and the community, promoting the school and school programs, and establishing linkages and partnerships. Examples of these contacts and their benefits are presented below.

Establishing Linkages and Partnerships

Linking and partnering among educators, employers, and others in the community often served as a prerequisite to more meaningful relationships and long-term benefits. Interviewees noted that some of these activities were informal whereas others were formal.

Teachers were most directly involved in establishing informal linkages. A marketing teacher indicated that "teachers in [the county] do see the community as a resource in assisting them in their teaching" and that "teachers have made contacts on their own." However, some teachers took the initiative to seek out partners and establish formal linkages with them. For example, a pharmacy teacher who was looking for employers to provide internships for students in her program stated,

> . . . about a week before school started in September . . . I went after Kroger's [pharmacies] right away and probably at the end of November they agreed to [establish a partnership] but we didn't actually sign it until January or February.

Formal partnerships tended to evolve at a rather high administrative level with several being initiated by educators, while others were initiated by employers and community groups. For example, managers of a local branch of a national company that hired one to two thousand part-time people a year were greatly concerned about optimizing hiring and reducing turnover. This need resulted in direct contact with education officials. Attending the first planning meeting were company representatives, an assistant superintendent from the state department of education, and representatives from five community colleges and five school districts. Ultimately, an agreement was reached. A community college administrator commented that the partnership "has been an enriching one for all of us and we are hoping that it is a model that we can carry on to other institutions. . . . I hope we can replicate it . . . with other companies."

Another meaningful partnership was spearheaded by a county Chamber of Commerce that helps keep students in school. Local Chamber of Commerce officials obtained agreement from both educators and numerous businesses and industries that employers would not hire youngsters on a full-time basis unless they had high school diplomas.

Several suggestions were provided by those interviewed for establishing linkages and partnerships. These have implications for teachers and others. First, it was suggested that schools provide an open-door policy for businesses to contact them. Second, as an educational administrator put it, "encourage teachers to go out and contact businesses. . . . We encourage the formation of partnerships when [the teachers] do that contacting." And third, ask what educators can do for the employer. An administrator explained the idea this way:

> The first thing we ask the business is what can we do for them? What are their needs? What are they seeing in students that are coming in looking for employment? We find a need [and] then we find a way to address that need. That generally starts the partnership right.

Gaining Information about the Workplace

Some teachers "rubbed shoulders" with employers so they could obtain information about what was happening and what recent developments were occurring in the workplace. One way to access information was to join and participate in professional groups such as the local Chamber of Commerce, local personnel directors' organization, local boards, and related organizations. A senior vice-president of a bank in one of the communities we visited commented that

> I think a lot of our teachers are involved through the local chamber and the local city groups. I think almost all the teachers belong to those groups and I think that enhances their knowledge of what goes on in the community and what they need to know in all the schools.

Another benefit was obtaining information that could assist in updating program content. An electrical trades teacher stated,

> . . . once [my students] graduate I give them my business card. . . . It's got my home phone number on it and I tell them that "anytime you need to contact me, you contact me and I'll help you [and] answer any questions that you've got and won't charge you anything for it or anything like that."

> And I get a lot of feedback from [them] which tells me which directions we need to go.

Gaining information was not restricted to teachers. A chief executive officer of a large company noted the value of sharing information in both directions:

> Another thing we have learned . . . is that one party cannot do it [school-to-work transition] in the absence of the other. . . . The industrial people are light on pedagogy and how young people learn. The school people are real light on how you use algebra in the workplace. They're pretty clueless about that. So they need the benefit of that information. And it's been, so far, a very successful experience.

Gaining Access to Employer Support and Resources

Another value of being in close contact with employers was seen as accessing different sorts of employer support or assistance. Teachers indicated that they had received a wide range of support. A health occupations teacher stated that linking with employers had resulted in many people from different hospitals volunteering to assist with some teaching and mentoring. This teacher was also able to spend several weeks during the summer working in two different medical centers. A health occupations teacher at a different site noted that through employer contacts, the school was able to show employers that by bringing students into the workplace, "not only will it be an opportunity for the students to learn from the professions, but it's also an opportunity for [employers] to also get, what we sometimes call, volunteer work." And a high-level corporate administrator stated,

> Another thing the teachers have done, they have built relationships with various companies so that if companies have in-house training programs such as management training or conflict resolution or whatever, teachers are very good at saying "May we come to these?" For instance, [a large company] has a very intense management training program and they have taken over 100 teachers through that professional development . . .

Improving Student Job Development and Placement Opportunities

Interviewees noted that contact with employers provided teachers with opportunities to develop students' job capabilities and place students in relevant work settings. For example, an early childhood teacher who had a great number of contacts in the workplace said,

> . . . one of the things that I feel I did when I first got [this teaching] job was to join the organization. We have a local early childhood organization and I became active in that. And I joined it mainly so I would have contact with the child care providers in the community because at that point I didn't know any of them. And of course over the years some of them have been real faithful. The placements [they provide] I use all the time; and they're real happy to have the students. So that's one piece.

Building on the above comments, this teacher went on to say,

> I think it helps to start to know people in the industry, the contacts, and keep up those contacts. Because it also helps with employability afterwards. I have one particular daycare [center] that if they get an application and its from one of my students, they'll call. Or if they need people, lots of times they'll call and say "We have this opening." Or, "Do you have anybody?" "Who do you recommend?"

Focusing on personal work experience in the workplace, a drafting teacher stated,

> Well I think it contributes a lot because not only do [the students] hear me say in the class "You know that we're going to do this because this is what you are going to do if you get a job." Then when they . . . get a job in the industry and I come by and visit with them, . . . they say "You know, you were right, we are doing what we were trained to do." And they are kind of excited, so to say, about the fact that [they] learned something in school and [they are] going to use it.

Summing up the way school-to-work programs can successfully link to student placement, an educational administrator noted,

> I'm finding for the more successful programs we have in the school that represent school-to-work, that you'll find those teachers are out in the community developing placements for their students. And, as a result of that activity, they are really getting to know the employers and employees.

Providing Assistance to Employers and the Community

There were several instances where, based on contacts, teachers and their schools provided assistance to employers and the community. In one such case, a vocational-technical school changed some of the content in an apprentice program to meet a manufacturer's changing worker requirements. A manufacturer representative noted,

> The [teachers in the school] did change their training. They got more into classroom work involving blueprint reading, tape measures, and math. They were already doing some of that but they modified it a little bit after those students were in here. The students actually went back [to the

> instructors] and said, "You know, we really need more of this; we need less of this."

Assistance also included teachers making presentations both in the workplace and to local service clubs. An industrial coordinator at one site indicated that

> . . . a lot of times the [teachers] are asked to speak at various . . . companies, to talk with employees about [the] jobs they are doing. They will go there and get to know the management and employees of the company, forming a bond so that the people in the organization will know the teachers are there to assist. . . . Several of our [teachers] have spoken at [the] Rotary and the Lions Club.

Teachers also provided training to businesses in the community. A transportation technology teacher offered an example of this type of activity:

> I went to [another city] four weeks in a row to receive training and right now I'm one of only two instructors [in the region] who are authorized to teach the new federal emissions program. So I can offer . . . some of the training when I go into these businesses.

Finally, a graphic art design teacher made an open invitation to provide assistance to employers and employees. He discussed offering

> . . . a service to the employers that if they ever need any help of any kind or if . . . the students they hire [need any help, they] can call me any time. . . . I can be of service to them.

Promoting the School and School Programs

A final area related to initiating and maintaining contact with employers focused on making the school and school programs more visible to persons in the workplace and the community. Promotional activities ranged from open houses to mall displays, descriptive brochures, presentations that marketed programs, and training.

Several teachers commented on the need for quality marketing. A graphic art design teacher stated that even a business card could spell the difference between marketing success and failure:

> You know, I made sure my business cards looked very good since I'm trying to sell the [printing firms]. I mean everything has to be just right. I can't give them a bad looking business card; these are printers I'm dealing with. When I started here the business cards were horrible. So I printed up

> some new ones and made sure they looked good so the industry [will not] say "Doesn't he want me to hire his students?"

An electronics teacher appeared to sum up the need to promotional opportunities by saying,

> If you're going to try to sell something, first you have to have the product and then you've got to make it available in as many places as you can. Over the radio, through TV, and whatever. I think that's been our approach here. . . . If we need to train for a specific industry, well we'll do that. They [people from industry] come out here [to the school] and get more of an idea of what we're all about. We get more of an idea of what they're all about so we have a better appreciation of each other.

Designing Classroom Experiences Around Workplace Expectations

A different theme focused on planning and providing classroom experiences focusing on workplace expectations. Several persons we interviewed commented on the importance of linking classroom instruction with what businesses and industries need. A school board member at one site stated,

> I think it's real important that we tie it all together with what happens when [the graduates] get a job. . . . Our public education for so many years is just taught from textbooks that never really expanded upon what happens after you get out of school.

This feeling was echoed by a special education teacher who facilitated the development of student employability skills at another site:

> I think [our education] links by letting the students know what is expected of them in the workplace. Many students are sheltered. They're not only sheltered at home; they are sheltered in their neighborhoods and they feel this is the only lifestyle. There is more than one lifestyle and we [teachers] hopefully give them a small introduction of what to expect in the real world.

A bank official at a different site noted the need to redesign what is taught in the schools based on information from an employer survey:

> The biggest complaint [from] manufacturers was the kids they were hiring out of high school . . . [they] didn't know how be on time. They didn't know how to handle themselves [in an] employer/employee situation. They didn't know how to dress. Is that the teacher's fault? Of course, its not. . . . But everything we do, I don't care what business you're in whether it is

> retail, manufacturing, doctoring, or lawyering, those skills you attain through on the job, or through college, or through your education, relate back to high school.

Planning

Providing classroom experiences for students was typically started by those involved in school-to-work transition using some type of planning process. Sometimes the process included people from a number of different areas. A school-to-work coordinator described how a Tech Prep program was organized as follows:

> What happens is that when we designed our model we sat down with all the people that were involved. We looked at the [state] requirements . . . in terms of graduation requirements. We looked at the SCANS [Secretary's Commission on Achieving Necessary Skills] objectives. We articulated with many groups—community, parents, [and] business personnel—to be sure that when we designed our model it incorporated all of these entities. As a result, we designed a Tech Prep program that addressed the needs of each person or each group. So that's really our main focus: to meet the needs because, again, we are trying to get these kids ready for the workplace, life-long learning, living and learning, etc.

Recalling a recent curriculum change, a school administrator stated,

> It would have been a straight textbook type of curriculum. And what we did is we took the Academy's competencies and we transposed that . . . and we changed [the curriculum] in to real-life applications. And the curriculum changed dramatically from a textbook approach . . . to something of real-life engagement. They [the students] do accident re-creations, . . . they are out in the woods doing compassing, I mean they're doing all that stuff. And that's the hands-on engagement I was telling you about.

Discussing the initiation of a school-to-work emphasis in a high school, a language arts teacher spoke to her involvement in the planning process:

> I believe [the school-to-work effort] was initiated because some of our teachers saw that there was a real need for this communication in the business world, and that we do prepare our students when they graduate to be able to enter that business world. So I think that some of us saw this as a very important thing to do . . . [t]he very fact that we're putting out that energy to understand the needs of the community. We're helping to forge that link between the high schools and the community, just by the fact that we are sensitive to these needs and we know where the kids have to go. We realize there's a deficit there; that linking is not going on between the high schools and the business community.

A counselor in the same high school said that their Tech Prep effort was designed "to help students learn about jobs while they are in school and start preparing so they can be qualified and hired after they are out of high school." This educator continued,

> It was a consortium of educators and business leaders who got together and developed this program. . . . It covers the criteria that employers want students to be aware of when they become employees. Not only are the skills physical skills, [but] also being able to work together [and] being able to communicate. It is sort of like the SCANS requirements.

Teaching

A number of comments were made about teaching that focused on workplace expectations. Drawing from knowledge of what local employers expect, a mathematics teacher said "I try to work with [the students'] attitudes a lot too; and just try to teach them what you're going to have to have to work in these plants." A drafting teacher at a different site provided a bit more information about the teaching process. He stated,

> Well let me tell you what we do. When we teach them something, or any of us that come in here teach in this environment, we try to use as many real world examples as possible. I've always used the term "real world" in anything I've done because if it doesn't relate to something you're going to use after you get out of my classroom, then you lose it.

A president of a large manufacturing firm and former school district school board member seemed to capture the ways that teaching can link the school and the workplace:

> One of the important things we've learned in [our school district] is that this sort of education is not about content. That you can take the traditional content we've always said is important, and it's just simply the way students experience that content. It's about pedagogy. It's about the way you organize classroom activities. It's about having students construct knowledge instead of just hearing it in a passive form. Having them actively involved in activities that construct knowledge is completely in concert with cognitive science and cognitive psychology . . . What we're doing [in our school district] is absolutely in concert with the new vision of how people learn and how people learn most effectively.

Following up on Current and Former Students

Interviewees also felt that determining how well students and former students are doing in the workplace was an important aspect of linking the school and the workplace. This theme centered on teacher involvement in student and former student follow-up

activities such as placement and evaluation and getting formal and informal feedback from workers in the workplace, including workplace instructors. Follow-up was discussed most frequently by school administrators who logically have more oversight responsibilities and accountability for students' and former students' on-the-job success.

One administrator at a school we visited stated that teachers were held responsible for following up on their own students. This person mentioned that teachers were told, "Now that you think about it, yes, you are held responsible. And I do expect you to find jobs for this kid and follow-up on that kid: one, three, and five year follow-ups."

In another location, the executive administrator for school-to-work opportunities in a community indicated that

> the teachers are involved in the placement of their students in permanent jobs. So that's not something that is solely handled by someone else, so to speak. So there is heightened awareness on the part of teachers as to what the employment needs are.

An early childhood teacher offered a first-hand statement of why following up on students in the workplace was so valuable.

> I like to visit the sites to get some feedback from the teachers in terms of what my students are doing, how they are doing. I like to visit in terms of keeping the personal contact up and being able to place students in the site because they know what's going on. And I like to see what's going on at the [child care] centers and sites myself in terms of knowing what kind of environment because the people [with whom] my students are placed are also doing the evaluation of my students for that time slot and everybody has different levels and different ways of evaluating students' work. So it helps me to kind of have a handle on that person . . . and sometimes if I get an evaluation that doesn't seem to fit the student, I can get an idea on that, too. I also get a lot of new ideas from visiting the sites that I take back to the students [who have not yet gone out on the job].

Several interviewees stated what they felt teachers and others should be doing in the follow-up area. A high school principal indicated that teachers needed

> . . . to develop a good follow through and a good follow-up plan for their students. Many teachers feel that once their students are placed in jobs, that's it; but often these students need someone to check on them, to call them. They need a base where they can always come back and get advice, referrals, maybe even just to complete a résumé or get a good reference. I think teachers need to be aware of that. Their job is never finished. Once [the teachers] place students on the job, they need to be there for the

> students, to follow them through to make sure [the students] will be successful on the job.

These comments were reinforced by an administrator at another location who suggested teachers and others take more interest in their students.

> A lot of kids today, I think, are missing that personal touch. You have a lot of one-parent families. You have a lot of both parents working. So who is really paying attention to Johnny or Mary in terms of their behavior in any situation? [The people in this youth apprentice program] have identified that as being significant to what is going on [here].

Following up on current and former students is recognized as being an important teacher function. On the other hand, a limited number of people commented on follow-up as being a meaningful school-to-work linking function. The limited number of persons who commented on the value of follow-up infers that either less is being done in this area or there is so much currently being done that it is considered to be commonplace.

CHARACTERISTICS TEACHERS NEED TO CONDUCT SUCCESSFUL SCHOOL-TO-WORK PROGRAMS

The interviewees were asked to describe what characteristics teachers must have to be most successful at organizing and conducting school-to-work programs. To clarify the question, we asked them to describe knowledge, attitudes, and competencies that would help teachers in their school-to-work efforts. As might be expected, the interviewees had a variety of opinions and discussed a broad range of characteristics that we coded under twelve different themes, with two of the them having subthemes. The interviewees not only named the characteristics, but they also provided insight as to why the characteristics are important for teachers. The themes and subthemes follow:

1. Understand and Meet Students' Needs
    - Accepting Students
    - Valuing Students
    - Developing Students as Individuals

- Establishing Working Relationships with Students

2. Establish and Maintain Relationships with the Workplace

3. Know the Workplace

   - Understanding the Workplace

   - Having First-Hand Knowledge of the Workplace

4. Communicate Effectively about School-to-Work Programs

5. Be Adaptable and Open to Change

6. Demonstrate Positive Attitudes Toward Work

7. Be Professional in Appearance and Conduct

8. Apply School Learning to the Workplace

9. Know Schools and Schooling

10. Be Knowledgeable and Competent in Teaching Area

11. Be Creative and Innovative in Teaching

12. Be Committed to Teaching

Table 2 lists examples of the teacher characteristics for each of the twelve themes. The text that follows contains selected statements from the interviewees that explain the need for the characteristics and why they are important for teachers.

Table 2
Characteristics Teachers Need To Conduct Successful School-to-Work Programs

Characteristic	Examples
Understand and Meet Students' Needs	Personal needs Educational needs Skills and technical needs
Establish and Maintain Relationships with the Workplace	Setting up internships, apprenticeships, job shadowing Meeting with business and industry
Know the Workplace (micro and macro views)	Know the needs of the local business and community economic base as well as a knowledge of the global economy
Communicate Effectively about School-to-Work Programs	Listening skills Oral communication skills, including telephone and interpersonal skills Writing skills
Be Adaptable and Open to Change	Flexibility Willingness to change with technological advances
Demonstrate Positive Attitudes Toward Work	Care and concern for others Views work (as a concept) in a positive light, with the realization that the economy is based on the local workforce
Be Professional in Appearance and Conduct	Neat Dependable and organized Personable
Apply School Learning to the Workplace	Can give practical workplace examples of how school-based learning is applied in the workplace
Know Schools and Schooling	Knowledge of school-based learning beyond own personal discipline
Be Knowledgeable and Competent in Teaching Area	Keep abreast of changing technology
Be Creative and Innovative in Teaching	Use of contextual learning projects, simulations, role plays, group assignments, unique field trips, and other teaching strategies
Be Committed to Teaching	Go the "extra mile" when dealing with students as well as with the business community Committed to learning

Understand and Meet Students' Needs

Understand and meet students' needs was one of the themes that emerged when interviewees were asked to give their opinions as to teacher characteristics essential for conducting school-to-work programs. We classified comments that supported this theme under four subthemes: accepting students, valuing them, developing them as individuals, and establishing positive relationships with them.

Accepting Students

As an administrator succinctly stated, teachers must have a "[w]illingness to accept students from a different life and in a different light and to allow them to grow."

Supporting this characteristic of accepting students, a business person from another site noted that "[teachers] have to understand that each student's needs are different." Further elaborating on this idea, two business owners stated,

> [The teacher] has to establish a relationship on a one to one basis either through an interview process or viewing the student in the classroom while trying to teach the vocation to see how the student is learning. . . . So the first thing is trying to understand what the student's needs are.
>
> The most important characteristic for a teacher to have is an ability to reach their students. [Teachers] must be able to communicate with them, be able to motivate them, be able to understand what makes them tick.

A Chamber of Commerce president also mentioned the need for accepting students. This person commented,

> . . . educators need the ability to work with students at different levels, just as is done in business. There's no cookie cutter way to treat any one person because they're all different, and something will trigger with one person that doesn't with someone else. . . . I think the ability to identify particular needs within the students is extremely important.

Guidance counselors mentioned the need to accept students and to understand that students have different learning styles and different needs. Comments from guidance counselors at different sites follow:

> [Teachers must have] a willingness to accept individual learning differences in students. I think knowledge of occupations that their subject matter relates to and willingness to stay up on the world of work [are important.

> They must] lose the total emphasis given to high academic achievement for the sake of going to an elite university.
>
> One of our teachers said, "I don't care what their leaning styles are, this is the way I teach and they better learn this way." That's the kind of thing that bothers me. There has to be a willingness to listen and learn [different ways to teach]. The fact is that only 20% of our kids learn the way a lot of teachers teach because it's still that old traditional "feed it back to me" teaching.

Valuing Students

Caring about students and valuing them for who they are was a frequently noted characteristic needed for teachers to help students transition to work. Explaining this characteristic, an elected local government official said, "The teacher has to be someone who really cares and works with these kids in terms of opening them up and making them think." While a PTA president further explained, "Sometimes [teachers] are geared toward the success of the program and their interest in whether the child is successful becomes secondary, and I don't see that [as appropriate]." Continuing, the PTA president noted,

> [Teachers] have to be sensitive to the needs of kids who may be afraid or who may not feel they have what it takes and they've got to be convincing [in showing] that you can be successful. [The teachers] have got to have some success stories so they can make students believe in what the program is about.

A school board member reinforced the need for teachers to value students:

> I think each teacher needs to ask the questions: What am I here for? Am I here for the benefit of these students? Or am I here to please myself and do what I want to do? And I think if you answer the former, then your heart and mind is going to be open to undertaking the sort of training and initiatives required [for a successful school-to-work effort].

The characteristic of caring was also noted as important by a business person who said,

> I think [teachers] really need to like students. And I think this needs to come across in their body language, how they articulate, what they say to students, how they work with them on a day-by-day basis. That's very important. I think when people feel good about themselves, you can get them to do anything.

Administrators, including school-to-work coordinators, also supported the need for teachers to care about and value students. "They must know their students a lot better than most educators" noted a high school principal. Continuing, the principal said,

> I'll be blunt about it, teachers are student advocates. They know more about kids than just what their course delivers. They're in tune with kids and they accommodate them. Yet the most important thing is they care about kids. And that may sound fuzzy, but the teacher must care about kids and the kids must know [that they do].

School-to-work coordinators at two different sites noted the need for teachers to care about students:

> [Teachers need] just true interest in the student, not just coming to earn a paycheck, but to really be there to help the kids and be willing to work toward the goal of molding the student to be that good employee.
>
> In terms of personality, I think above and beyond, they basically have to be an advocate for that kid and they have to really, at all costs, be looking at what's best for a kid, not what's best for a system or a program or even a business for that matter.

Caring about students was also considered an important characteristic needed by vocational teachers. A health occupations teacher stated, "I wholeheartedly believe the very first thing is to really care for your students. That's number one . . . you need to care about them." Adding to what the health occupations teacher said, a home economics teacher noted, "They have to see the student as being a prized possession. Something that is cherished and loved that can be successful." The following statements from a drafting teacher and an auto mechanics teacher further illustrate the need to value students:

> [Teachers] have to have the attitude that they care about students and have to prove that they accept all kids where they are, as they are, and then push them as far as the students' sanity and the teacher's sanity will allow.
>
> Of course, all of us know teachers have to have a positive attitude and be willing to work with every type of student that they face and look at them as being able to train them for some particular job in the automotive industry whether it is changing tires or rebuilding engines.

Mentioning the need to value students, a social studies teacher noted that teachers "need to look at the student as an individual, not as some type of generic mass of humanity." Further, the teacher who can successfully help students transition to work, was

described by a guidance counselor as one who "cares that students are going to be successful" and who cares about "what they're doing each day."

Developing Students as Individuals

Vocational teachers, in particular, felt that the teachers who help students transition to work must have the desire and put forth the effort to develop each student as an individual. An auto mechanics teacher expressed this characteristic as developing students "to get them on a higher playing field than where they started." This interviewee noted that as a beginning teacher he "assumed the students knew a lot more than they did." An auto mechanics teacher at another site said that the teacher must "realize most students are just beginners." Continuing, he noted that the teachers should think back to what they were like as high school students. A business teacher describing the need to develop students said that the teacher "must convince the students that they can do this, that it's not too hard, and even if it's too hard, they can learn how to do it." A Law and Government magnet school program teacher also addressed the need for teachers to develop students. This teacher said "I really want to see my students make it. When they do, I feel as if I've made it."

A mathematics teacher stated that "good teachers have to know where they are going and lead each student to it and then let the student explore." Here again, a teacher indicated the need to develop each student. The idea of developing students was also mentioned by a personnel recruiter from business who stated "the teacher must take a genuine interest in the student and care whether the student succeeds or continues to go through the process of improving."

Establish Working Relationships with Students

Interviewees also discussed the importance of teachers establishing a working relationship with students in understanding and meeting their needs. An administrator noted,

> With curriculum content, we tried to get at that level where teaching and learning makes the most difference, and what we have decided that level to be is in the individual classroom between the individual student and the individual teacher. That's where learning can be enhanced. That's where achievement can be enhanced. That's where the action takes place. We can have global goals for schools, but until they are reduced to that basic level where that interaction is enhanced and there is quality interaction between the teacher and the student, we haven't accomplished anything.

A restaurant manager confirming the importance of teachers interacting with students said, "The most important thing for a teacher to have to be successful is an ability to reach and interact with their students." Agreeing with this manager's observation, a science teacher said, ". . . being a teacher you have to be able to interact with people, and in particular with students, and be able to have a good relationship with them." From a guidance counselor's perspective, being able to interact with students was described as the "teachers being approachable, so that students can feel comfortable in coming to them and asking questions."

"You [the teacher] would definitely have to have a good working relationship with your students," noted an auto mechanics teachers. Other vocational teachers supported the need to interact positively with students. The following examples from a health occupations teacher and a cooperative work experience coordinator, illustrate this characteristic:

> I've found right from the beginning of teaching that you can find one or more wonderful things about anybody. So find out that wonderful thing right off the bat . . . and concentrate on it. Maybe when the student acts inappropriately for the tenth time, it's hard to remember those things, but if you just remember the good points and concentrate on those, you can really [work with the student].

> [Teachers] have to spend a little more time listening to the students. I think it is a natural thing for one adult to listen to another one. I think it is an acquired skill for a 40-year-old to listen to a 16-year-old. I'm not sure we teachers do that as well as we should.

Establish and Maintain Relationships with the Workplace

Business, industry, and community people; teachers, both vocational and academic; administrators; school-to-work coordinators; and guidance counselors all spoke to the need for teachers to be able to establish and maintain positive relationships with members of the workplace. These relationships included communicating with businesses, accepting the importance of the workplace to today's students, getting involved with individuals in the workplace, knowing how to interact with these people, and establishing a presence in the community at large.

A business representative emphasized the need for teachers "to know how to link themselves with the workplace, with government organizations, and with the community in general." At another site an industrial coordinator explained the idea of linking more fully:

> [Teachers must] see how they're linked and must see from both sides. They have an opportunity to let business and industry know what goes on in the schools. So, it's a two way street . . . [The teachers] build enough rapport so they can come in and [help business] understand the reasoning as to why some of the things are done as they are in the educational system. . . . [Business] can then get a real understanding of why things are taught the way they are and can clear up a lot of doubts business may have and break down a lot of barriers that exist between educational institutions and business. And when [educators] break those barriers down, then they have the opportunity to work with private industry.

Addressing linking from a different perspective, a business representative stated,

> I don't think there is anything more important than [teachers] understanding what businesses need and then doing what they can to provide that . . . . [Teachers and business] have to be able to get together and communicate and develop some consensus. . . . [Teachers] need to be able to talk to businesspeople and say "What do you need and what is really important to you?"

A language arts teacher perceived having businesspeople come to the school as an important component of linking. The teacher explained,

> I'd like to see business leaders come into the schools and connect with the teachers—all of them, and have, for example, a whole day of workshops where business leaders explain exactly what they need. They could come to us and say what type of student they need. . . . I'd like to see us meeting about once a month with businesses and asking "Are things getting better?"

An English teacher pointed out that teachers "have to be willing to accept that there is a world out there that was not there when they were kids. Teachers have to try to learn enough of what's going on to keep current." Teachers realized that to do this would take time and would require getting out of the school and classroom. A business teacher noted that "the teacher has to participate professionally whether it be on the business tours, helping chaperone the job shadowing, or taking part in career fairs." This teacher continued, "I just think teachers have to be active outside their classrooms." An early childhood teacher also confirmed the need for making "those contacts in the community and spending time outside the school day to be involved with businesses." Elaborating on the

benefits of teachers being involved with business outside the classroom, a transportation teacher noted,

> I walk into a business and say "I'm a vocational instructor and I'm here to help." It's like the IRS trying to help, and the business person is not going to let me help until that person has confidence that I have the ability to help. . . . That's why I think it's important to get out into industry and work with businesspeople and to talk with them occasionally. Just go by and visit and see what's new. It's thrilling to have someone from industry call and say "I've got a problem and I don't know you, but I heard by word-of-mouth that you can help."

A technical college dean also spoke to the importance of teachers linking actively with.the workplace:

> [Most teachers] have never existed outside the educational system as a professional. . . . Their real understanding of life issues that businesses face today are absolutely out of touch. And businesses are somewhat out of touch with what the real issues [are] that teachers face in our schools today.

Further, a principal noted that teachers "have to keep connections with the workplace." He said, "They can't just talk about what the workplace is like, they have to go out there and work at it. [They must] have connections, linkages, and they have to keep current." Business representatives were particularly emphatic in identifying the need for teachers to be able to get involved in the workplace. As one noted,

> I think teachers should not just stay in the classroom. Every so often, they should go out into the workplace and see what is going on. That would not only give them an idea as to how they can update their curriculums, but they might also be able to give the employer some idea of how to improve based on what is being done in the classroom.

At the same site, a restaurant owner noted,

> If you are a teacher in the Food Service Department, . . . I would certainly make sure that I wrote letters on a regular basis or had personal communications with at least one successful person in the fast food industry, a manager or regional manager. I would make sure I had regular communications with somebody in the hotel industry, as well as made acquaintances with both the community college food services professionals and a private enterprise restaurant owner. I'd make sure I had at least five people in my bag of tricks that I could call on and say "I'd like you to come in, if you wouldn't mind and give me an hour of your time and talk to my students."

At another site, an owner of a child-care center spoke positively of the relationship she had with the child care program teacher. The owner explained,

> [The teacher] seeks input from us, she asks for suggestions. She asks how what she is doing helps the students who work here, and she asks what could be done differently. She tries as much as she can to make connections with us out in the community to see how we can help her better the program.

A workforce development coordinator described the need for teachers being committed to involvement with the workplace.

> [Teachers] need to be willing to take a little bit of extra time because it's going to take a little extra time to call the businesses, to do the worksite visits. . . . If I'm the math teacher, I need to take time to call the appropriate person at the worksite to get the flavor for "Hey, if I do this in my classroom, is this going to be helpful for you if the students comes to work for you?" So teachers need to take the extra time.

Knowing how to approach, meet, and work with people from the workplace was perceived as an important skill needed by teachers. Classically describing this skill, a vocational teacher noted, "you've got to be able to go out there and you've got to be able to walk the walk with a business person, you've got to be able to talk the talk, and you've got to know when to push and when to back off." An autocad teacher saw the need for "being very organized up front and knowing what you're going to ask the employer before you sit down with the employer as helpful." And a math teacher cautioned teachers to go to the worksite and "be very courteous and respectful of whatever the work is." This teacher also noted that teachers need to approach businesspeople with a lack of arrogance. A business teacher saw the need for knowing what to say and how to say it as follows:

> When I was working with [a major employer in the area], there were a lot of people who wanted to tell me just what was wrong with education. And you have to listen to that because some of what they say is real. And say to them "yes that is a good point, but what do [you] think we can do about it," instead of being on the defensive. . . . [Further], I have found that people who are most critical sometimes are the ones willing to help if you approach them by asking "how can you help me" instead of "you don't know what you are talking about."

A guidance counselor felt that teachers needed relationship building skills, being able to work "one-on-one with the employers to develop the teachers' credibility." Adding to this point, a guidance counselor at another site felt that teachers needed to get to know

businesspeople personally so that "when picking up the phone, it's not Mr. 'this,' it's Jerry [or whatever the person's first name is]."

Businesspeople mentioned that teachers should know how to ask for help. Describing how this might be done, a bank officer said,

> [Teachers] have got to feel comfortable in asking people to do things for them that they've never asked them to do before. And if they don't feel comfortable in asking someone in a business setting to help, they can't do it. [Helping students transition to work] is a cooperative effort, teachers can't do it unless business is willing to help. The other thing is teachers have to learn how to get information in a hurry because businesspeople do not have a lot of time to give to this effort. So [teachers] have to be able to communicate quickly what they want business to do and what are the [anticipated] outcomes.

In addition, a school-to-work director commented about asking the individuals in the workplace for help:

> What [teachers] need to realize is that if they'll approach a business person and let that person know this kid is not finished yet and we're looking at this as you being able to contribute to that, the businesses take on a wonderful role of being part of the extended family. They say, "Hey great, we can help."

Several interviewees addressed the importance of teachers being able to mediate student problems that might be encountered in workplace settings. One employer described the process as follows:

> [Teachers] are going to have to be a mediator in some cases between the student and the company. They're going to have to have their educational hat on to determine what the requirements of the business are. They need to have good observation skills in particular instances and translate from business jargon to academic jargon [for their students].

Speaking to the role of teachers as mediators between businesses and students, a marketing teacher described what the teacher needs to do:

> You must not over-react when a situation comes up and the student's ready to quit or the employer's ready to toss the kid, that type of thing. You must be the calm amongst the storm so to speak, and not believe completely either one. I tell the students that I am going to tend to side with the employer because I'm going to have to work with the employer after the student is gone. I'm a student advocate, but many times I have to side with business and industry.

Being involved in the community at large was seen as a way for teachers to build relationships with businesses. Teachers should "get more involved in community, civic, and social organizations" noted a Chamber of Commerce president. A school board member extended the idea of teacher involvement in the community to one of teachers and students volunteering. The school board member discussed the significance of this involvement, stating,

> The students in the [health occupations] program actually go into nursing homes and give some of their time as part of their classwork. . . . The medical profession or the nursing home community is always ready with open arms to have anybody come in and help. . . . It would be nice if there was a way to take that model and apply it to other types of businesses so that students in other fields could volunteer their time to actually do tasks of businesses. . . . When you think of it from a business perspective, the business person will automatically realize that any time devoted to working with a student is going to be a cost. . . . If schools develop a program where students go out in the community and offered services on a volunteer basis, I think there might be a wider exposure for the students to be able to go out and test their educational experiences in the real world.

Summing up the importance of community involvement for teachers, an employment manager noted,

> I think [teachers] need to have contacts within the businesses. If a student has an interest in a certain area, maybe the teacher can guide that student to an internship or a summer job or may just have a speaker come in and talk to the class. Or talk to that one student, one on one. [Teachers] need to be involved in the community; not just in the school community, but with people in the workplace. . . . I realize that we're all busy doing our jobs, but I think there are opportunities for all of us to get involved. If not during the day, in the evenings [when] all types of business networking opportunities [are available].

Know the Workplace

Two subthemes emerged for the teacher characteristic of displaying knowledge of business and the workplace. The first focused on teachers' understanding the workplace; while the second focused on having first-hand knowledge of the workplace.

Understanding the Workplace

Three types of interviewees addressed the need for teachers to have a broad-based understanding of the workplace: (1) business representatives, (2) administrators, and (3) school-to-work coordinators. A human resource director at a local manufacturing plant noted that teachers "need to keep abreast of what the economy is like in their community, what the needs are as far as the community is concerned, and where students can find jobs." Explaining the knowledge that teachers need in a more global perspective, a customer service manager stated,

> [Teachers must] be willing to change and keep up with new demands of the world and recognize them and know that even here we are talking about the shrinking world and its global economy. . . . You know we've got people here who may become international bankers, marketers, and entrepreneurs.

A high school assistant principal described this knowledge more in terms of helping students, saying that teachers need to relate to "local goals as far as where we would like our students to be in the year 2000." Continuing, the principal noted that teachers need to think about "what types of jobs will be available in the area and how do we train our students to be employable in those positions in 2000 and 2010." Another administrator suggested that the way for teachers to gain this knowledge is "to do a lot of reading and a lot of communicating to know what's going on in the business world." This administrator suggested that teachers read a special section of the local paper that provided business information.

Two school-to-work coordinators addressed the need for teachers to understand the business climate:

> [Teachers need] an understanding of what's going on in the workplace, which jobs are doing well, which industries are doing well, which are doing poorly. . . . Basically, they need a good idea of what's going on within the workplace right now and what's anticipated to happen within the next year or two.

> Traditionally, this area has had a high percentage of manufacturing. Well, two big employers have just gone out of business. . . . The manufacturers are struggling here because a lot of work is being done in other countries where the labor is cheaper. So, like it or not, this area is being forced to change. [Teachers need] to look ahead, see what's predicted and make the changes in their curriculum when they see trends. [Teachers need] to pick up a paper, listen to the news, just be aware of what's happening in their area.

Interviewees from businesses and community representatives, many of whom were also businesspeople, were concerned that teachers lack an understanding of the business environment. Elaborating, a manager of a manufacturing business stated, "We would like teachers to have a sensitivity, understanding, and appreciation for the free enterprise system. The importance of total quality in a job well done." Another business person describing the dichotomy between the business world and the school world, explained

> I think there has to be some education by the workplace to the teacher population of what [business] is all about. . . . I don't like to generalize, but sometimes education is such an overwhelming profession that maybe there isn't time or effort left [for teachers] to see what all of us regular people in the business world do. I think there needs to be an appreciation for those of us in business.

"I think sometimes our teachers have taught for so long or that's the only job they've ever had that they don't fully understand the workplace" noted a school board member. Discussing the difference between the school world and the business world, a school board member at another site who was also a business person, said

> [Teachers] have to understand when they're talking to businesspeople that the framework is bottom lines, margins, and dollars. In this area there's a lot of openness in the workplace to assisting education and listening and trying to help. . . . [However], if the teacher can know something about the business person's needs and problems, I think that educator could bring a lot of success, or the likelihood of success, to partnerships [with business] being made.

Interestingly, a school-to-work director commented on the need for teachers to know what business can and cannot do for education. The director said,

> Teachers will go out to the workplace and they don't understand how business works, they don't understand the structure, the timelines, and just the intricacies of being in business. They will request things that are unreasonable and at the same time overlook obvious things that they didn't know were available.

Another school-to-work coordinator discussed the fact that businesses are not out there to be an adjunct to the school system. The coordinator emphasized that schools need to be sensitive to the fact that "businesses are in business to make money." They may be willing to open their doors to educators, but educators must understand their perspective. Adding to this idea, a business manager at a large manufacturing plant discussed the

difference between school and work and the need for change in the school environment as follows:

> One of the first things [educators] need to look at is attendance because you cannot have a bad attendance record at this company. . . . The difference is "I'll go to school whenever I want," while on the job [its] "I have to get this done, I am responsible and accountable to people who are down the line from me. I am going to be customer oriented." So I sense a difference between the corporate culture and the education culture.

Businesspeople and administrators perceived that teachers need to be knowledgeable of the rapid changes occurring in the workplace. "Things that were emphasized five years ago" need to be examined as to whether they are appropriate for today's business manager. Explaining some of the change that has occurred in the workplace, an industry coordinator said,

> We have gone from that one level, one operation type thing where a person could come in and do the same thing routinely over and over again to a point in time where a problem is developed and a team gets together and solves that problem, or at least a [worker] knows how to move toward solving it or getting the answers to solve the problem.

A community college business management dean explained that teachers "keeping current is probably most important especially in the business world. It's changing quickly, [for example], computers that were first-line five years ago are way out-of-date today." Further discussing the need for teachers to stay current with regard to workplace changes, an assistant principal discussed the fate of computer programming training:

> Ten years ago, we had computer programming and all of the high schools had computer programming classes. . . . There are probably a million people out there who started out taking computer programming classes now doing something else. When the timber industries started failing they said take training in computer programming. . . . Now, how many computer programmers are out there? Not that many. . . . So, now I don't know what our present example of computer programming might be.

A director of business services summed up the need for teachers to be aware of the changing work environment:

> [Teachers] need to keep on top of changes in the workforce and different things like new technologies and changing jobs in general. . . . Teachers need to be aware generally of what is going on in the workplace in terms of new jobs, in terms of where opportunities are, where good jobs are.

Businesspeople, administrators, and teachers spoke to the need for teachers to be knowledgeable of skills needed in the workplace. For example, a community representative from industry stated that teachers need to know "the value of math and of a basic understanding of science in the workplace"; while an economic development corporation vice president felt that teachers need to realize that "many factories are highly technical, highly automated, and they need to prepare students for these jobs with math and problem solving skills." An industry representative from another site commented that a teacher needs to know what skills are needed to enter the workplace and see that students get those skills. Discussing workplace skills, a restaurant owner who was sponsoring a school-to-work intern from a culinary arts program noted that a variety of skills are needed:

> It takes a lot for a customer to sit down and get good service and good food in a comfortable atmosphere. It takes a team of people to do that. It takes a good waitress, a good cook, and obviously a good manager. Not just cooking, that's just one small part of it. . . . [Culinary arts students] need to know the entire business. They can't just be great cooks. [On the job], they must figure out food costs, not yell at the waitresses, and get along with the manager.

Confirming the need for broad-based skills that the interviewees from the workplace described, a technical center administrator said,

> Don't send us a person in manufacturing that has a very narrow scope and a very deep intensity in one area of study. In other words, don't send us a machinist that is an absolute expert lathe operator but doesn't understand computer-aided drafting, computer-aided manufacturing, metallurgy, principles of welding, pneumatics, hydraulics, and marketing. . . . [We are, however,] turning out teachers with this narrower and narrower, more specialized focus that's going in exactly the opposite direction of this.

Giving the teachers' perspective on their need for knowing the skills of the workplace, a science teacher said "we don't know what an employer wants and when students go out and can't give the employer what is wanted, then, we haven't done our job." Adding to this comment, an auto body teacher said, "we must have good information about what industry requires, what industry wants." A business teacher more fully discussing the need for teachers to know skills of the workplace stated,

> I think [knowing skills needed] is really important. What skills does the student have to have. What skills are required, and so I guess that goes back to communication with the business. What is that particular business looking for. What will it take for the student to do the work successfully.

To address the problem of teachers knowing skills needed in the workplace, a guidance counselor reported,

> We're going to bring in businesspeople, people who are involved in vocational education beyond high school, and some college people. We're going to listen to what they're looking for.

Having First-Hand Knowledge of the Workplace

As might be expected, the need for first-hand knowledge of the workplace surfaced. A delivery service manager asked "How can a teacher teaching about business in the high school who has never been in business teach business effectively?" A housing authority manager saw teachers going to the workplace as the answer. He said, "If a teacher came to see the different types and aspects of work that we're doing, then the teacher might be able to relate that in one way or another to helping with whatever subject is [being taught]. Adding to this, a human resources director indicated that teachers "need to have first-hand knowledge of what the work sites are like [and] they need a knowledge of what every day work life is like." The concern that businesspeople had about teachers' lack of knowledge of the workplace was more fully explained by a bank vice president:

> The impression I have about a lot of teachers from when I was going to school is that typically they go through college, earn their teaching certificate, get their degree, and right off they go into teaching. They may not have ever worked in private industry, in manufacturing, or an office setting, so they may not have an idea of what is required there.

A vice president for an economic development corporation felt that teachers perceived factory work as "dirty and 'grungy,' while many factories are highly technical, highly automated." Summing up the concern that businesspeople have about teachers' knowledge of the workplace, a workforce development director noted,

> [Teachers] need to have some first-hand knowledge and therefore direct interaction with people from the workplace. . . . They need to become actively involved and avail themselves of the interaction [with business] that is available to them.

Administrators also perceived that teachers need knowledge of the world of work. A community college dean noted that "they need to know it extremely well and therefore need to get out and see it first hand." Adding to this comment, a high school principal felt that many teachers live in a world isolated from the workplace. "They need to be personally

knowledgeable of the world of work," he said. An assistant principal promoted teacher internships as a good way for them to gain this knowledge, commenting, "[I think teachers] need to get out and see [the workplace]. I wish there were six-week internships, or ten-week internships, . . . where we could put all teachers so they could see how real job settings, where our students will be going, are [structured]." A school-to-work coordinator reinforced the need for teachers to know the workplace before being involved in school-to-work efforts, stating,

> My advice would be to take that teacher and match the teacher up with the local Chamber of Commerce first and get the teacher involved at that level. Then, set up some release time where the teacher can go and just visit businesses for no other purpose than to visit; don't even think about starting a school-to-work partnership because the first thing they have to do is understand the nature of the beast they're working with if they go out and try to start partnerships.

Reinforcing the administrators' comments, a community representative discussed the preparation of teachers as follows:

> There ought to be more emphasis on their getting out into the community to actually see behaviors that employers value. . . . The more time that teachers can spend in a variety of different work environments the more relevant they can make their curriculum.

Several vocational teachers addressed the importance of teachers having first-hand knowledge of the workplace. An auto mechanics teacher said, "You have to stay current in your [teaching] field; you wouldn't want to teach information that's outdated." One way this teacher kept current was through information secured from friends in industry. Confirming what the auto mechanics instructor said, a health specialties teacher reported,

> [Teachers] need to understand what's going on in business, what are the business's needs. So we have to communicate with businesses. . . . When I started this health specialties program, I didn't know much about dental or veterinarian. So what I did one summer was took all these books home and I studied and I learned and I went to the dentists' offices, the veterinarians' offices, to all the different places my students were going to be. And, I got a feel for what the students had to know and had them tell me what the students needed to know.

Having a background of actual work experience was perceived as an important way for teachers to gain knowledge of the workplace. A community action program representative noted that a teacher "needs to have some business experience to have a real

feeling for what business is like." A community member at another site, providing reinforcement for teachers having actual work experience, said "The more time that teachers can spend in a variety of different work environments the more relevant they can make their curriculum."

Naturally, a number of vocational teachers cited actual work experience as important. "They have to have a working knowledge of the industry related to their teaching," said an auto mechanics teacher. Continuing the teacher added, "They have to have experience in industry. You don't learn that out of a textbook or by watching a video. Work experience in the industry is [essential]." A cooperative work experience teacher with a background of working in the steel mills of Pittsburgh said that for most teachers working in industry is "totally beyond their comprehension." This teacher noted that "[It] takes a great deal of experience to know what is involved in that transition at the age of 16 or 17 to the [world of work]." A business teacher indicated that after college, "I did work in industry for five years in several different jobs and that has helped me." Another business teacher supported the need for actual work experience stating,

> I've had experiences with running my own business and that experience helps me be better at doing the school-to work program versus a [teacher] coming straight from college.

Expressing the need for teachers to have work experience to be effective in school-to-work settings, a health occupations teacher explained,

> I'm in health occupations, my background is nursing, I'm a nurse first. I think teachers need to have knowledge of the field they're trying to provide instruction in.

Communicate Effectively about School-to-Work Programs

Communicating effectively about school-to-work requires well-developed verbal skills as well as displaying enthusiasm for school-to-work efforts and selling the concept to individuals in the workplace and to students. "We [teachers] need to not only relate to our students but we need to relate to employers and other businesspeople as well to get them to understand our needs and what we expect of them," stated a food production teacher. A supervisor from a school division's central office, describing the importance of teachers' communicating effectively, commented,

> [Teachers] need to be able to communicate with people, they need to be able to communicate with business, they need to keep the lines of communication open at all times. I think sometimes we [educators] get off in our own little world and feel like we are up-to-date when we're really way behind.

Businesspeople explained that effective communication includes listening. A store manager emphasized that teachers promoting school-to-work activities need to be "good communicators and good listeners." Further expanding on this idea, a human resource manager for a manufacturing company noted,

> Teachers want to be in control and teachers who tend to be in control sometimes don't listen well. . . . [Teachers] need to listen to people in the workplace, listen to the students, and be creative in how they teach students.

Knowing how to communicate was addressed by school-to-work coordinators in different settings. A technical center school-to-work coordinator described a horticulture teacher who "is not comfortable with formal presentations nor putting his thoughts and ideas down on paper, but is very comfortable with [local horticulture business] owners. His interaction with the community is on a personal one-to-one basis." Expanding on how teachers can effectively communicate with businesspeople, a community college technology coordinator suggested the following:

> The real key to [communicating] is listening and never being afraid to state your point of view. And never be offended by anybody's remarks. It's a laid-back, easy attitude approach that really works. Most businesspeople, amazingly to me, are good in their businesses but they're nervous about being in an education setting. I think we need to make them at ease, bring them into the fold.

When communicating about school-to-work transition, teachers need to show enthusiasm. They "must have the desire to know what's going on in the business world, that enthusiasm for knowing what is so important," stated a business owner. However, an attorney who sponsored student interns was concerned that not all teachers seem to have the needed enthusiasm for what they are doing. Using the word "excited," an employment manager described how teachers must feel to communicate effectively:

> I've worked with educators, and you can tell those that are excited about the program and those who are just going through the phases because they think it's right and, you know, we have to deal with this. But those that

> really have an excitement and want to take that back to the students, there's a real difference in them.

A school-to-work coordinator characterized the teachers who communicate effectively as "real go-getters." They are "willing to do what it takes to reach a goal instead of just sitting back and waiting for things to come to them." The coordinator continued, explaining that they are "visionaries that can see things that aren't there yet." A principal characterized these people as "real shakers and bakers." He said, "I have to ask myself what makes them the shakers and bakers?" The one common trait the principal saw these teachers as having was being "enthusiastic about what they do." Summing up the need for being enthusiastic, a vice principal described a core of six teachers who spearheaded school-to-work efforts as follows:

> [These teachers] have to be very excited about what they are doing and they have to communicate that excitement not only to students, but to staff members. They have to be enthusiastic, have high energy. We have that. I mean the teachers have gotten me so excited about Tech Prep and school-to-work and they have gotten this school on board in many ways.

Echoing the need for enthusiasm for school-to-work efforts, a transportation teacher said,

> [Teachers] need to have a positive attitude that they can be professionals because attitude and enthusiasm are very catching. If I'm excited and I'm enthused then pretty soon you're excited and enthused and if I feel good about what we're doing then you're going to feel good about what we're doing. The industries, the students, the teachers, everybody has to have a bit of enthusiasm and excitement and like what they're doing. It's very catching when people are excited and interested in what they [are] doing which is a definite plus [in school-to-work activities].

A school board member describing the excellent technical programs available through the cities schools was concerned that the teachers "haven't done a real good job marketing their programs." To effectively communicate about school-to-work, a bank manager recommended that teachers assume the role of salespersons, promoters of the program. "You've got to be able to convince the businesspeople to work with you, to work with your students, and you've got to be able to communicate with them," stated the bank manager. A technical center placement director felt that the way to achieve this goal was "to have good rapport with businesspeople because you need to talk to them and get them to help you."

Vocational teachers involved in finding work-based learning experiences for their students discussed the importance of selling both the program and their students. A manufacturing and welding technology teacher characterized what the teacher needs to do as "you have to go to these businesses and you have to convince them that you are interested in providing them with a service and a product that they want." One way to do this noted a food production teacher is to "let them know that you are skilled in your area and that you [have] students prepared with the job skills that are important to them." A technology teacher at another site found that teachers must use "the what's in it for me perspective" in promoting their programs to businesspeople. They must let the businesspeople know how they will benefit. Continuing, this teacher stated,

> The most important thing is to have good communication skills and be able to convince people that what you are doing is important. I think you have to be able to sell them on the advantages to them. Why should they be involved. . . . If you tell most teachers they have to be salespersons, they say no, I'm just a teacher.

A health occupations teacher described the same need for teachers to be able to sell their programs and students commenting,

> We're taking time out of [business peoples'] busy day for them to be partnering with the students, so we basically have to sell the program to them. Then you have to be available to them so if problems come up, they know you can do the problem solving.

Be Adaptable and Open to Change

Interviewees at all sites discussed the need for teachers involved with school-to-work programs to be adaptable and open to change. This included displaying characteristics of being dynamic, optimistic, flexible, curious, open-minded, and willing to take risks. However, some interviewees perceived change as difficult for teachers. For example, a workplace development agency director described teachers as focused on the education community, making it difficult for them to change. An employment manager who perceived that teachers do not readily accept change said, "they wait for something to be sanctioned before they do it." A business owner more fully described the situation as follows:

> [Teachers] need flexibility to recognize how quickly things are changing and be able to adapt to that. . . . [But,] flexibility is sometimes difficult to deal with in education because [educators] tend to be more bureaucratic and more

> set in their ways. They need to be willing to listen; they need to be open to change.

Teachers themselves addressed the need for being open to change. "You have to be open minded, you have to be willing to learn, constantly willing to learn, you can't just learn your content area and plan to deliver it the same way for thirty years," noted an English teacher. Being flexible and able to relate to a wide variety of people was seen as important by a math teacher. A social studies teacher also saw the need for teachers to change, stating,

> [Teachers] have to be willing and open-minded when they go out and talk with others and to learn from others. Basically going out and getting their hands dirty with industry. [They must] sit down with that industry and be willing to learn whatever industry people are saying. I think that often some teachers kind of deal with philosophy of education rather than the realities of education.

A community college dean of career and technical education noted that teachers are not going to be able to teach as they have taught in the past and they will need to change their course content much more quickly than they would have 15 years ago. Teachers must realize that just as in business, "what worked yesterday won't necessarily work today" stated a human relations director from industry. Discussing how teachers can adapt to changes required for school-to-work transition, an autocad teacher commented,

> I think it's important that teachers are willing to change even if it's just a little bit at a time. If you remember what it was like to first learn a computer, you probably thought, "I can write this faster by hand than I can put it into this dumb computer." But then you found that computers weren't so bad and their use had advantages, and made it easier. . . . So for school-to-work, teachers need to pull things that they're already doing that are school-to-work [related] and take them a step further. Build on something they already know and are already working with, but they have to be willing to change.

Teachers should bring to their classrooms "new workplace information," said a Chamber of Commerce director citing the need for teachers to exhibit open-mindedness. A principal perceived a need for teachers to understand that in business "techniques, technology, everything is changing." Some teachers, however, "aren't accepting feedback from business," noted a guidance counselor addressing the need for teachers to be flexible and adaptable. A school-to-work coordinator spoke about how teachers must change:

> First of all and foremost is a willingness [for teachers] to change. Willing to have an outlook on today's industry and today's technology. None of the instructors at this school are fixed in the sense of "This is the technique I learned. I'm not going to change." Teachers have to have the attitude to accept change and to improve themselves.

Several interviewees expressed concern about teachers changing the way they teach. For example, a Chamber of Commerce president saw educators as "resistant to change, [they've] done things the same way for so long." A school board member expressed similar concern stating, "Teachers do what they want to after the door of the classroom closes." Continuing, the school board member said, "Unless their hearts and minds are oriented towards doing things in a systematically different way, it's simply not going to happen." Agreeing, a guidance counselor noted, "Teachers cannot be resistant to change and insist on teaching as they've always done."

Teachers themselves expressed concern about implementing changes in instruction. An early childhood teacher saw the need for "an open attitude and being flexible in terms of accepting other people's standards." Further, a social studies teacher saw a need "to be very flexible and willing to change the use of allotted class time."

Addressing what was seen as the narrow perception teachers have of learning, an associate superintendent said, "Teachers need to recognize that education is not confined by the four walls of their classrooms and that there are very good learning experiences that happen outside of their classrooms." In support of this superintendent's observation, a school-to-work coordinator commented,

> [Teachers] need to be open-minded. Many of the teachers who have taught for years and years and years still have the mindset that learning [only] takes place in the classroom. It's a new concept that a lot of learning takes place outside the classroom. And a ton of it does. Those students who are working 40 hours a week all summer long are learning all that time and they're learning a tremendous amount.

Demonstrate Positive Attitudes Toward Work

Having a positive attitude toward work and valuing what is done in the workplace were viewed as essential for teachers' successful involvement with school-to-work programs. Teachers need to "have the right values about what employment is and what it

means, rather than a just an understanding of what the education process is" if they are going to help students transition to work, noted an industry-based school-to-work coordinator. A school superintendent perceived this as teachers' "accepting work with dignity." Further clarifying the need for teachers' viewing work positively, a guidance counselor said "they must believe that [school-to-work] experiences can help every student." A science teacher put the need for teachers' valuing work in more understandable terms by stating that teachers must think of all students as having the potential to become "successful tax payers." Concurring with this idea, a marketing teacher stated,

> I think a teacher's attitude toward the person who is going into the workforce is terribly important and we [teachers] don't fully appreciate the fact that our economic base here in our county and in most school systems is based in the local workforce. . . . [When] teachers go to the workplace and come back in the classroom, we hope they will come back and say positive things about working in this area.

Teachers also need to see their students as entering the world of work, not just going on for further education. A former Chamber of Commerce director noted that he had not seen teachers place much value on the workplace and felt that they must "believe in workplace-bound versus college-bound." An industrial education coordinator expressed the same sentiment, stating that "teachers must understand that all of our kids are not going to college and they need to have the skills to get along in the workplace." Teachers must not focus only on academic students cautioned a principal:

> Different kids learn and grow in different ways and may need alternative paths to be successful. [As educators,] we might like a straight academic program. [But] students who have not been successful may not be mature enough, they may not be psychologically ready, they may not share the same value system. [Teachers] must be patient in working with them, giving them the skills they need to work with an employer.

In displaying a positive attitude toward work, teachers also need to serve as role models for their students. A community action representative discussed their emulating the positive attitudes of businesspeople as one way to do this. "They need to tell their students that [on-the-job experience] is an opportunity and will give them more alternatives in life," noted a business owner. A school-to-work coordinator adding to this idea felt that having "a positive attitude is critical because teachers have to model for the students what's appropriate. I think," continued the coordinator "that they're one of the most important role models in terms of success of the students out in the workplace."

Vocational teachers reinforced the idea that teachers need to show their students that they value work. A food production and management teacher said "I have to have a positive attitude that this is going to work and that we are going to set up good relationships [with business]." The teacher added, "If I have a positive attitude toward work, the students will be more likely to have positive attitudes." Explaining in more concrete terms how teachers can show their students that they value work, a business teacher said,

> [The teacher must] serve as a role model of the workplace. I think it's important that the teacher develop, not [just] develop but demonstrate qualities that the workplace demands, like punctuality, efficient time management, and really putting in a day's work for a day's pay.

Be Professional in Appearance and Conduct

In workplace involvement and in setting an example for students, the interviewees noted that teachers involved with school-to-work programs need to have both professional appearance and conduct. A school-to-work coordinator describing these characteristics as important said, "When our teachers go out into business and industry, we want to show that we are professionals and that we are serious about what we are doing." Speaking from the perspective of working with students, a health occupations teacher noted, "I need to present myself as a professional and I think oftentimes students learn by the example." Further, this teacher believes that in health occupations professional standards for dress exist and she teaches those standards to her students and "holds them accountable for being dressed the way they should be."

A drafting teacher noted the importance of personal grooming and habits in setting an example for students. He said, "Students see how you're dressed, they see if you shine your shoes, they see those personal things. Kids want role models and you have to be one for them." The following comments from a science teacher reinforce those of the drafting teacher:

> Teachers need to be role models. Every time I have been out into business, I find businesspeople look at school teaching as not a real job. When we go out to businesses, we need to be more professional. Teachers need to be able to dress professionally, to act professional, to have empathy for what's going on in the workplace, and to realize they are role models for what business thinks about schools.

From the perspective of the workplace, a Chamber of Commerce president expressed concern about many teachers not setting the appropriate example. This interviewee commented,

> Teachers really need to set an example for the students the way that business dresses. I have to speak in a lot of schools and I'll tell you I'm absolutely shocked and dismayed when I go in and I see teachers in sweatshirts and denims, clothes like that in the classrooms. I just think that if you want to teach kids, you have to be a good example. And when we talk about work and being professional, you have to dress the part. . . . I just can't emphasize enough the importance of dress in the workplace. When teachers go to work, they're supposed to set the example, not dress down like the kids do.

Business teachers, in particular, felt that they needed to set a positive example as far as dress is concerned. One of them said, "A business teacher, especially, should not come dressed too casually even though this is not a business place. The teacher is setting an example for the student. They need to see that businesspeople have to dress-up." Another business teacher noted, "that the teacher going into school-to-work activities needs to model the look [appropriate for business]."

Apply School Learning to the Workplace

Students find learning more relevant when they can see the purpose of it. Thus, the interviewees talked about the importance of tying what is learned in school to what is used in the world of work. "I think that a teacher needs to constantly let the kids know that what they are doing is important to their future, " noted a guidance counselor; while a housing authority manager, who served as the worksite supervisor for a student intern, felt that "it's important for their future to be able to tell the students how this subject may relate with the work they're going to be doing." Similarly, a workplace development director noted, "If you take the core subjects of math, English, literature, and history, there's not a single day that one of those subjects is covered in a classroom that it doesn't have some connection to all of our lives."

A director for a Big Brothers/Big Sisters program at one site noted that teachers need to teach more than just academic and technical skills. They need to emphasize with their students "communication, problem solving, thinking on their feet, . . . negotiation,

conflict resolution, and dealing with people," stated this interviewee. Further, they need to emphasize how these skills are used in work settings. A community college school-to-work coordinator commented that from associations with "CEOs and high level supervisors as well as technicians" that he saw the need for teaching teamwork, problem-solving, and critical thinking skills. "I think any of these could be modeled in the classroom and developed through contextual learning so that students then could transfer them to the workplace," he noted. An automotive technology teacher also addressed teaching more than technical and academic skills so that students can transfer them to the workplace. He said,

> [Auto] technicians are going to interact more and more with the customers. So not only do they have to look good, they have to look professional, they have to speak professionally, and they have to be able to interact with the customer, because in the automotive industry we make our money on customer loyalty. . . . So when a customer brings in a car, the customer wants to know what's wrong with it. [The technician] needs to be able to tell the customer what is happening and why.

Several interviewees observed the need for basic skills to be taught in context. A school board member stated, "I see a lot of skills being taught in school but the students can't tie what's being taught in the classroom with the real world and the way things really happen in the world." Agreeing with the school board member, an administrator said,

> We can't teach math by standing up and talking about mathematics and writing theoretical problems on a chalkboard, handing out mimeographed math activities, and having students fill them out and hand them back. That's not a good way to teach math whether it's at the 4th grade level or the 12th grade level. . . . [The teachers] need to realize that they are not teachers of subject matter, but are teachers of students. Mathematics is an area which happens to have skills applicable [to the workplace].

A store manager was also concerned about students not relating math taught in school to what they need in their lives. The manager described a conversation he had with students who were working for him:

> For marketing, "I'm talking multiplying, adding, dividing, and figuring percentages," I said. And one of the kids asked, "Are you really serious?" I said, "Yes." "Then why am I taking all this trig and calculus?" the kid asked. I said, "Because it's helping you learn to think logically and do things like that." . . . Well, I have to believe that the teacher didn't say anything about why the students were taking calculus and what they were going to get from it. You know, in my store, I can't get anybody to do anything if I don't tell them why.

At another site, however, a business teacher did speak positively of learning that was tied to workplace requirements students were experiencing in math, science, and English courses. She said,

> In academic classes, I think the teachers have done a tremendous job in trying to relate math to why it is important on the job. And we have science teachers that have the students do different activities that show how science is important for the workforce, and the English teachers do the same. [For example], the Tech Prep math teacher has students go out and find people in jobs and interview them asking how they use math in their jobs. The people can be electricians, doctors, or anyone the students want to interview in the workplace. The students come back and they write up their interviews, which is writing in a math class. . . . It's a pretty good size project and it involves integration. It involves showing the students why they are learning what they are and how they are going to be using it.

Summing up the need for relating the learning of basic skills to the workplace, an assistant principal commented,

> We need to learn how to tie the academic part into the vocational part so that our kids know those things that are also needed. You know, a lot of our kids who are in vocational programs don't realize that they need to write. They need to know how to speak. They need to know how to work a computer. So there's a lot of areas that tie into each other. I think that's the biggest thing that the teachers are working on and will continue to work on.

Know Schools and Schooling

A Tech Prep coordinator noted, "school-to-work is about change, it's about mind set change, it's about preparing students to go to work, whether that's right out of high school, or after they go to a community college, or after they take the four-year path." Continuing, the coordinator added, "If there is change happening, teachers need support of administration, and the school board needs to be behind them, and they need to have the community know what's going on." Thus, they need to be able to tell others about changes that are occurring in the school. Further, a school-to-work director felt that teachers need to know "the political climate" in their community and they need to know the support that exists from the school board and the superintendent before starting to implement school-to-work changes.

From the perspective of the teachers themselves, a language arts teacher found that teachers need to learn all they can about what is going on in their schools. For school-to-work to succeed, the teacher said, "We need to get out of our own little classrooms and become more aware of each other and interlink." A math teacher agreed, stating that "teachers need a frame of reference [for school-to-work transition], they need to see the big picture." Addressing this concern, a technology teacher noted that teachers being organized in career clusters helped them learn about changes that were being made. This teacher, too, felt that teachers tended to isolate themselves in their own classrooms. He noted that he had seen "teachers who worked in the same building but didn't have any contact with one another." A science teacher also spoke of difficulty in learning about school-to-work changes. The teacher said, "I think maybe more of our staff development time might go toward actually having time to get together with other teachers, with the vocational people, so we can tie in more with them." A guidance counselor spoke of a staff development activity where the teachers from different disciplines did meet together. The counselor reported,

> By the end of the day, when we would recap the day's activities, we heard the teachers say it was just so beneficial for them to have a technical person sitting next to someone who teaches rhetoric, for example, and having that interchange of ideas. Yes, the disciplines are different, but there is a lot of commonality between them also. [The teachers] got ideas from each other, I just think that they learned quite a bit from each other.

Several interviewees spoke of providing the opportunity for teachers to learn about school-to-work activities in their schools. For example, an administrator who told about a staff development day noted,

> One of the major activities for us was to make sure our own faculty and staff within our institution were aware of what school-to-work was all about because our faculty had a real learning curve [for it]. When you start talking about applied academics, that raises a red flag in the mind of a lot of faculty and we had to make them understand that the paradigm has shifted. [Through the applied academics], we're talking about raising the level of rigor and level of preparation.

An industrial education coordinator had the opportunity "to spend half a day in each [vocational] class, licensed practical nursing, welding, electrical, heat and air, cosmetology, and so on." He said, "I would sit there and see what went on and it was the best experience." Continuing, this coordinator noted that he would never have been able to discuss what the students' programs were about with employers without having had this

experience. A math teacher spoke about learning what goes on in vocational classes through mini-lessons provided by the vocational teachers. Through the help of the electronics teacher, the math teacher had completed mini-lessons on a special type of micrometer and on different current types.

A guidance counselor felt that teachers involved with school-to-work have the responsibility to let others know about their programs. For example, at this site, brochures explaining the school-to-work internship and pre-apprentice programs are placed in every room in the building. The counselor believed that "sooner or later, somebody is going to pick up the brochures and read them, or create class discussion around them."

Be Knowledgeable and Competent in Teaching Area

From the interviews, we learned that preparing students to transition to work successfully requires teachers who are knowledgeable and competent in their teaching areas. A school board member saw this knowledge as based in teachers' knowing their "own individual competencies, or strong points, and also knowing their weak points." The president of a local Parent, Teacher, Student Association believed that teachers "must want to increase their knowledge as time goes on, . . . and they must have the desire for success" in what they do. A principal discussed what he does as an example for teachers to follow:

> [Teachers] need to do just as I have to keep abreast. I've gone to school all of my career practically and I'm always in training and I'm always in workshops and I'm always looking for new things and new avenues [to improve]. I'll go home at night and I'm always thinking of new ways to make this building better every day, you know, more creative things to do, more innovative things to do, and more ways that are going to make the students in this building be successful. I think teachers have to take that same attitude. They must constantly be regrouping and restructuring. All the time [teachers] must keep abreast of what's happening outside this [building].

A school-to-work coordinator noted that "it would be beneficial if teachers had the desire for lifelong learning because that's the only way they can be current in the discipline they teach and be aware of the latest developments." Concurring with the coordinator, a pharmacy teacher said "teachers have to be open to change in education and have the drive and motivation to learn new things"; while a business teacher said, "Teachers have to

constantly update as to what is expected in business and transfer that knowledge back to the classroom." A science teacher observing what teachers must do today to provide up-to-date instruction said,

> Teachers have to be more competent now than they have been in the past. By that I mean, and I'm a science teacher, I can't just explain protein synthesis, now I have to tell why it's important and where it fits into the [real world]. I have to go beyond the level of competency that I was comfortable with in the past.

A business manager for a construction company described the knowledge and competence needed by a teacher as one of understanding relevant technical aspects of business as well having the ability to instruct. These two areas were also identified by a principal at a vocational center:

> Technical competence certainly is necessary, but I don't think as quickly as the world is changing now that we can expect any one teacher to keep up with everything, . . . But I think it's real important that they know how to identify resources that can support them, and I think they also must teach students something about how their going to have to function in the world.

Supporting that teachers need both content knowledge and to know how to teach, a manufacturing and welding teacher said, "Teachers must really understand their subject and they've got to realize that the students don't know it." Thus, they must also know how to teach it. Adding to this teacher's thoughts, a health occupations teacher said, "I believe if you don't know your stuff, the kids are going to know it and they are not going to listen to you. It's very important for you to work part-time or in the summer or to have an employment association [of some type]."

Speaking to changes in the workplace, a business representative noted that "the way things are changing in the environment we live in, things change in 12 months not 5 years." Continuing he said,

> Teachers need to be ready for change so they can prepare the students for that change. . . . They need to change their teaching techniques to reflect those changes that students are going to need to know when they leave [school].

A school board member, addressing the need for up-to-date technical knowledge, felt that competent teachers "need to be confident in the high-tech end of what goes on with

computers and some of the software that's available." An automotive technician program teacher noted, "Computers drive everything today on an automobile." The teacher has "to understand the new technology and computers; math and science are very, very important; and they have to be able to read technical material." Confirming the need for computer knowledge as well as other technical knowledge, a restaurant owner discussed the work environment in that industry:

> You can't service a table anymore if you can't effectively use a computer because no one writes down orders anymore. Everything is keyed through a computer so that the inventory is always accurate. That's one area. In the kitchen, the technologies in food preparation are also changing—different kind of equipment, [for example]. Things can be done in vastly shorter periods of time.

A vocational coordinator supported the comments of the restaurant owner in discussing how a teacher at a vocational center updates what is taught:

> Our auto body teacher next year will have a new curriculum up and in place. And that's not because it fell into his lap, but it is because of what he does in the summer. He works as an auto body technician and what comes across his desk there, the publications, and what is required for success in the workplace is what he requires his students to do.

Teachers cannot rely on experiences learned from business and industry 25 years ago noted a fabricating company manager. Yet the manager believed that "we have teachers that worked in industry 25 years ago and are still teaching information that has been obsolete for 15 or 20 years already." Concurring with this comment, an automotive industry executive said, "You can't teach students 1930s skills and expect them to fit into the 1990s market. Teachers must have the foresight to be able to update and change their curriculums." To remedy this situation, a middle school principal indicated that teachers must be aware of the fact that the knowledge will constantly change and they have to adapt to that. The principal suggested "that if business provides the teachers with an opportunity, they have to take that [information] and integrate it into existing programs."

A school-to-work program director summarizing the need for teachers to be knowledgeable and competent in their teaching area commented,

> A teacher needs to know where to find the answers. A teacher needs to be aware that in a changing world where we don't know what's coming, we must always be current in how to find the answers. Today, that's becoming more and more technology based. Computers are here and teachers had

> better know the valuable resource they present. I think more than ever, and again, I'm going back to skills which we all need, teachers need to be self-aware of their own skills and be developing their expertise in their own areas. They need to teach their students to access information from anywhere when they want a real expert. When students can do that, they will make the teacher's day.

Be Creative and Innovative in Teaching

At the different sites we visited, interviewees discussed the importance of teachers' reaching students through creative, innovative teaching when helping them transition to work. Many, many different strategies were mentioned, including use of contextual learning, project-based learning, simulations, group assignments, role playing, integrating instruction across disciplines, student organization activities, unique field trips, and having students themselves take control of their own learning. Overriding all of these strategies was the need for teachers to take risks and find a variety of ways to recognize students with different capabilities and learning styles for excellence.

A bank manager compared the innovative, creative teacher to one who looks at teaching as employees of a progressive bank look at banking today. Teachers must think "out of the box," noted the manager. In other words, teachers today must be constantly concerned with their students learning and "build lesson plans that are more appealing to their students. Students have to be involved in activities, they can't just listen," the banker continued. A social studies teacher added to what teachers must do today, stating that a teacher must "get out of the room, open the door, let the world come in and don't be a teacher that 'says this is my dirty desk, these are my 30 students, I'm going to close this door and I'll see you at the end of the year.'" Speaking to the need for teachers to integrate their instruction with that of other teachers, a technical center director commented,

> Teachers' attitudes have to be based upon flexibility and creativity and not the traditional comfort zone mentality that I teach physical education or I teach math. [They must think] I teach students in preparation for integration into the workplace. . . . There has been a lack of flexibility in our instruction with the segregation of academic subject matter. We ring a bell, we put one book away and get another book out. We were studying English, now we're studying history, now we're studying science. And a bell rings and we put our science away and now we're studying math. That is absolutely absurd in my opinion.

From the workplace, a fabricating company manager noted that learning should be fun. The manager said, "algebra, geometry, trigonometry, and mechanical drawing can be boring if you're not having any fun and maybe you're not learning either." One answer to this problem, the manager noted was for the "teacher to be enthused and have a positive attitude." He continued by describing the effectiveness of teachers who involved their students in designing an electric car where they learned these subjects, as well as English, in a contextual setting. Also supporting contextual learning, a local government official noted,

> I think it is essential for teachers to do a lot of practicums where they have students simulate [for example] banking. Students go into the bank [here at the school] and they simulate the functions of a bank. They also have a [restaurant] management model where they simulate work in a restaurant and a law simulation with a mock trial. They do legal research and things like that so they actually create real experiences for the student in a school setting. And they have the medical lab where the students have a pharmacy, so they're actually doing the work and not just reading about it.

A principal at an urban magnet school felt that teachers have to have instruction "that's really moving and shaking to keep the students interested and learning today." Agreeing with the principal's sentiments, a school board member from another site discussed the need for teachers to be "fundamentally creative, enthusiastic, and willing to deliver instruction in a significantly different way." The school board member saw contextual learning experiences, such as those described above, as important. He said, "It's a lot harder to create contextual experiences than to lecture out of a textbook. It's a lot more demanding and a lot more creative. It is quite frankly, harder work," but something teachers must do.

Teachers discussed helping students transition to work by meeting their individual needs. A transportation teacher said, "it's not just one teaching method because students learn differently and we must learn to teach to keep all students interested and involved, make them want to get as much as they can out of the class." A workplace development director who echoed the transportation teacher's concern said,

> To instruct a whole classroom of kids with different ways of learning, teachers have to be intuitive and willing to try to model their teaching style to what will benefit all of those different students. That's probably the most difficult thing that teachers in public education have to deal with.

Teachers told about various strategies that they had used to interest students. "I think creativity is a very important factor. If one way doesn't work, the teacher has to be able to think of five different ways" to reach students, noted a language arts teacher. Group projects were an effective method used by a science teacher, a social studies teacher, and a drafting teacher. The three teachers reported on experiences they had with students working in groups as follows:

> One thing we do in this [science] lab is teach group work, or use cooperative learning to teach students how to work together in a group . . . because in the business world, most of the work is done in groups. And some kids don't know how to work with a group and they need to know how.
>
> I made them draw a map of the high school. I taught them how to use map making tools to draw the map. They had to put the houses, the school, the businesses in. The ones I saw doing the most work and leading the way in the groups got the better grades. The ones who did presentations got the better grades. So when we did work in groups, I did grade them differently than when they did regular book work.
>
> [Students need] the personal traits of getting along with people and [of being] able to work in a group of four, five, six people. What I do in my class is have group projects were kids work together for a week. They don't have a choice of others they work with. They pay each other at the end with their grades and points they assign one another. That's kind of modeling what is done in industry.

A health occupations teacher saw student organizations as useful in making instruction relevant. Through the organization the student come to feel that "they're part of a family and that they're involved"; while a law and government teacher reported having speakers with different experiences related to law come to class and taking the students on unique field trips. For example, the students went to a local university and sat in on a law class and they went to the hall of justice in the downtown area.

At one site, the teachers described how they were having students take control and be responsible for their own learning. An English teacher noted, "I let the students take control. I show them the game plan, what needs to be done" and they decide how to do it. For this approach, the teacher has to accept the fact that "there is a lot of commotion, a lot of moving around, and it is difficult because as an adult you want to have control and structure." Adding to this a social studies teacher said, "You have to be able to adjust to the students taking control." This teacher continued saying, "Instead of standing up and

lecturing which is easy, you have to get up there and connect things. Use your imagination and have the students do it." A math teacher vividly described the learning situation when students are in control as follows:

> [For teachers] what's comfortable is just standing up lecturing kids who are sitting being quiet. . . . When they were working in groups they organized, I wasn't continually in control. I'm more of a facilitator and that takes some adjustment. . . . [The teacher] must not mind that the students are moving about, are in and out of the room going to the library to do research, doing outside labs, and other things. [The teacher] must trust them enough for them to be able to get their job done and not be continually making sure they're always totally on track, allowing them leeway to meet deadlines as they would on the job. Just kind of releasing some of your hold over them and letting them do things their own way.

One factor in innovative, creative teaching that a principal identified was teachers' finding "opportunities for students to use skills they have acquired and be recognized for excellence." The principal noted that this was the one special thing that happened in his school: "kids have opportunities to show off." The rewards were not just for the academically talented or those who had excelled in sports.

Be Committed to Teaching

"First, teachers must want to be involved in school-to-work and they've got to want to be successful, so that means they've got to do some extra things," commented a Parent, Teacher, Student Association president. Adding to this interviewee's perception, a human resource director observed that teachers who came to his organization to participate in back-to-industry internships were the ones who "are committed to learn, to become better teachers, and to take back to school with them what they've learned." Furthermore, a school board member discussing teachers' desire to be recognized as professionals said,

> If teachers want that level of recognition [as professionals] then they must be willing to undertake the sort of inventiveness, the sort of problem solving, the sort of creativity, the sort of commitment [required of professionals].

A special education coordinator felt that "teachers have to have a commitment and a love and a determination that students are going to progress and really do well in the workplace." This coordinator further commented that "teachers must be highly motivated,

. . . self-directed individuals." A school-to-work coordinator described teacher commitment in terms of being "compassionate about teaching" and having "enthusiasm for it." A law and government teacher described teacher commitment as being able to "really like what you're doing and being interested in what you're doing." From the perspective of a school division supervisor, the committed teacher is student-oriented and gives unselfishly of self and time. The supervisor said,

> Teachers have to be committed to the education of the whole child and they have to philosophically believe that every student can and must be a contributing member of society, there are no throw away children. They have to be willing to give unselfishly of their time and give hours they will never be paid for.

Teachers, in particular, felt that they needed to be committed to students. "We must want to help somebody else grow," said an autocad teacher. While an automotive technology teacher characterized teacher commitment to students as their "enjoying working with kids, and . . . enjoying just getting to school in the morning and seeing the students' shiny faces." And a science teacher spoke about commitment in terms of being "really sincere about what you are doing." This teacher cautioned that students can tell when teachers are not sincere.

DISCUSSION

Our results supported the need for both vocational and academic teachers to be well-prepared to conduct school-to-work transition activities. Not only must teachers be skilled at teaching but they should also be able to forge and maintain linkages between the school and the workplace. Thus, when we sought to align teachers' activities that contribute to school-to-work success with the characteristics they need to conduct these activities we soon found that the task was complex. The approach we took to align these areas was through the creation of a matrix that appears in Table 3. Using the matrix, we identified teacher characteristics (labeled C1 through C12) that contribute to each of the activity areas (labeled A1 through A10). For the ten activity areas, we selected only those characteristics that interviewees' comments supported having the best fit with each of them. The discussion that follows elaborates on knowledge, attitudes, and competence teachers must have to be effective contributors to students' school-to-work transition. Explanations of why the characteristics are important to teachers are provided.

Table 3
Teachers' School-to-Work Activities and Related Characteristics

Activities / Characteristics	A1. Involving Students in Organized Workplace Experiences	A2. Helping Students To Understand the Workplace	A3. Involving Workplace Representatives in School Curriculum and Instruction	A4. Providing Workplace Experiences for Students Through School Activities	A5. Including a Workplace Focus in School Instruction	A6. Learning about the Workplace in Ways that Contribute to Better Teaching	A7. Working in the Workplace	A8. Initiating and Maintaining Contact With Employers and the Community	A9. Designing Classroom Experiences Around Workplace Expectations	A10. Following up on Current and Former Students
C1. Understand and Meet Students' Needs										
C2. Establish and Maintain Relationships with the Workplace										
C3. Know the Workplace										
C4. Communicate Effectively About School-to-Work Programs										
C5. Be Adaptable and Open to Change										
C6. Demonstrate Positive Attitudes Toward Work										

*Blocks with shading reflect characteristics with the greatest contributions to the activities

Table 3 (cont.)

Activities / Characteristics	A1. Involving Students in Organized Workplace Experiences	A2. Helping Students To Understand the Workplace	A3. Involving Workplace Representatives in School Curriculum and Instruction	A4. Providing Workplace Experiences for Students Through School Activities	A5. Including a Workplace Focus in School Instruction	A6. Learning about the Workplace in Ways that Contribute to Better Teaching	A7. Working in the Workplace	A8. Initiating and Maintaining Contact With Employers and the Community	A9. Designing Classroom Experiences Around Workplace Expectations	A10. Following up on Current and Former Students
C7. Be Professional in Appearance and Conduct										
C8. Apply School Learning to the Workplace										
C9. Know Schools and Schooling										
C10. Be Knowledgeable and Competent in Teaching Area										
C11. Be Creative and Innovative in Teaching										
C12. Be Committed to Teaching										

*Blocks with shading reflect characteristics with the greatest contributions to the activities

Teachers' School-to-Work Activities

The following is a brief description of each of the ten school-to-work activities:

A1. Involving Students in Organized Workplace Experiences

Teachers must be able to plan and conduct organized workplace experiences for their students, working individually and as team members, in providing students with active, hands-on learning in work environments. Teachers need facility in providing their students with meaningful on-the-job experiences including mentoring, shadowing, interning, cooperative work experience, and youth apprenticeship.

A2. Helping Students To Understand the Workplace

Successful transition of students to the workplace requires that they understand it. Teachers can increase workplace understanding through the use of field trips and having their students participate in professional meetings, including those of student organizations.

A3. Involving Workplace Representatives in School Curriculum and Instruction

Engaging workplace representatives in school activities can lead to their making meaningful contributions to students' school-to-work transition. Teachers must be able to identify and involve workplace representatives who will provide worthwhile advice, serve as guest speakers, assess student progress, and provide resources for the school.

A4. Providing Workplace Experiences for Students Through School Activities

An essential component of school-to-work learning is having in-school experiences that mirror the workplace. Otherwise, many students will fail to see the relevance of the learning for their futures. These experiences, which can be gained from school-based activities, include construction projects, store and bank operations, restaurant and catering services, child care, and automotive repair for example.

A5. Including a Workplace Focus in School Instruction

Various teaching activities help students link their learning with the workplace. These included use of vocational student organization activities, role playing, simulating workplace conditions, and emphasizing applied instruction in both vocational and academic classes.

A6. Learning about the Workplace in Ways that Contribute to Better Teaching

To conduct successful school-to-work activities, teachers must learn about the workplace and incorporate that knowledge in their classroom instruction. Knowledge of the workplace can be gained through business partnerships, advisory committees, technical updating, formal classes, and various other ways.

A7. Working in the Workplace

Teachers who have work experience, particularly experience that relates to their teaching area, are able to link school with work for their students in meaningful ways. Work experience helps them teach relevant content and up-to-date technical skills. It also helps teachers see the need to develop students' interpersonal skills.

A8. Initiating and Maintaining Contact with Employers and the Community

To support school-to-work transition efforts, teachers must link formally and informally with employers and with the community. These linkages forged with employers and the community help teachers gain information about the workplace, access employer support and resources, obtain student placement opportunities, and help promote school efforts and programs.

A9. Designing Classroom Experiences Around Workplace Expectations

Classroom experiences organized around and focused on workplace expectations give meaning to school-based learning. Teachers can positively impact learning through this focus as they plan and provide classroom instruction.

A10. Following up on Current and Former Students

Teachers involved with school-to-work transition efforts must be skilled at contacting and visiting their current and former students in workplace settings. Follow-up activities include student placement, evaluation, and obtaining formal and informal feedback from students in the workplace.

Teachers' School-to-Work Characteristics

In the discussion that follows, the twelve characteristics that teachers need to effectively conduct the school-to-work activities are summarized. At the end of each summary, a listing of activities where the interviewees used the characteristic is provided.

C1. Understand and Meet Students' Needs

Students' needs include their strengths, limitations, interests, and potential for growth. Regardless of their individual needs, however, all students must transition from school to the workplace. Thus, teachers must help all students understand the workplace and help them develop as individuals who can contribute positively to it. To do this, teachers must accept students, value them, and do all they can to develop them as individuals. Further, teachers must recognize that today's workplace is changing and they cannot focus solely on preparing students academically for further education.

Teachers who keep up-to-date on the world of work can make instruction relevant to students who have different learning styles and needs. They can help all students understand the importance of work in their lives. Further, focusing on students' needs allows teachers to design classroom learning experiences that meet their needs.

An important way for teachers to help students learn of the workplace is by using input from workplace representatives. Teachers must select the proper mix of workplace representatives and involve them in a variety of school activities to meet the diverse needs of their students. Organizing workplace experiences that match students' needs requires that teachers fully understand their students' needs. Students can then be placed in work-based experiences that align with their capabilities and expectations.

Follow-up activities can serve as the culminating aspect of understanding and meeting students' needs. Teachers who visit current and former students in the workplace show by example that concern for students' needs does not end when they leave the school setting. Through follow-up contacts, teachers are able to reach and communicate with their students, continue to motivate them, and seek to meet their workplace educational needs. By maintaining relationships with students after they are in the workplace, teachers can build upon established personal linkages, serving as informal counselors, consultants, and coaches to their students.

From interviewees' perspectives, the teacher characteristic of Understanding Students' Needs was particularly important for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences, (A2) Helping Students To Understand the Workplace, (A3) Involving Workplace Representatives in School Curriculum and Instruction, (A5) Including a Workplace Focus in School Instruction, (A9) Designing Classroom Experiences Around Workplace Expectations, and (A10) Following up on Current and Former Students.

C2. Establish and Maintain Relationships with the Workplace

To keep abreast of what is going on in the workplace, teachers must establish and maintain linkages with the business community. The knowledge and information gained through these linkages provides teachers with "real world" examples to use in classroom activities that contribute to better teaching and enhance students' success in transitioning to work. Further, maintaining linkages with the workplace provides teachers with a variety of resources, including guest speakers, filed trip sites, and advisory committee members who can provide input for developing curriculum, selecting equipment, and validating skills and knowledge needed in the workplace.

Relationships teachers establish with the workplace require that they display sensitivity for workplace perceptions, needs, and expectations. Actual work experience can help teachers develop familiarity and comfort in making workplace connections. Further, through work experience, teachers establish contacts with business and industry representatives. Teachers must know how to communicate with workplace representatives, how to interact with the business community, and how to establish their presence in the business community at large.

If teachers expect to be successful at placing students in the workplace, they must be able to work closely with employers. Through regular personal contact with employers, teachers place themselves in an excellent position to know what employers' needs are and can thus place their students in workplace experiences that maximize the benefit to both students and employers.

Teachers who develop school-based projects that simulate workplace requirements and help their students operate school-based enterprises must have input from business and industry representatives. Particularly important is their securing input from representatives of organizations that supply similar products and services. To receive this input, they must establish and maintain positive relationships with these representatives.

From the interviewees' perspectives, the teacher characteristic of Establish and Maintain Relationships with the Workplace was important for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences, (A2) Helping Students To Understand the Workplace, (A3) Involving Workplace Representatives in School Curriculum and Instruction, (A4) Providing Workplace Experiences for Students Through School Activities, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A7) Working in the Workplace, (A8) Initiating and Maintaining Contact with Employers and the Community, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C3. Know the Workplace

To help students understand the world of work, teachers must themselves have a broad-based understanding of the workplace. This understanding includes not only the local economy but the global economy as well. Further, to provide a realistic workplace focus to their instruction, teachers must understand the importance of competition, the free enterprise system, the profit motive in the workplace, skills workers need, and how to apply what they are teaching to the workplace. Teachers must be able to provide classroom experiences that include both content and context requirements of the workplace.

Having first-hand knowledge of the workplace is vital to helping students transition to work. Teachers can gain this knowledge through work experience, internships, summer jobs, and Back-to-Industry programs. This knowledge must be constantly updated through

communication with business and industry representatives and by visiting workplace settings on a regular basis. First-hand knowledge enables teachers to enhance and focus their instruction so that it meets their students' needs as they transition to the workplace. It must extend from knowing characteristics their students need for success in the workplace to specific skills that are needed in different occupations. Further, this knowledge helps teachers keep abreast of present and future workplace opportunities available to their students.

A particularly effective way for teachers to develop workplace knowledge is by taking time to visit workplace settings of both their current and former students. These visits expose the teachers to what is happening in businesses, industries, and the community. Gaining a current understanding of the workplace through follow-up activities helps teachers identify job opportunities for current students and align curriculum with contemporary workplace requirements.

From interviewees' perspectives, the teacher characteristic of Know the Workplace contributed to the following school-to-work activities: (A2) Helping Students To Understand the Workplace, (A4) Providing Workplace Experiences for Students Through School Activities, (A5) Including a Workplace Focus in School Instruction, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A7) Working in the Workplace, (A8) Initiating and Maintaining Contact with Employers and the Community, (A9) Designing Classroom Experiences Around Workplace Expectations, and (A10) Following up on Current and Former Students.

C4. Communicate Effectively about School-to-Work Programs

Maintaining meaningful workplace linkages demands that teachers be skilled communicators. Teachers must be enthusiastic school-to-work salespeople for their students, their programs, and their school. They must effectively "sell" the idea of school to work not only to the business community but also to their students. School-to-work activities require teachers to communicate with individuals of varied interests and backgrounds in the workplace.

To engage workplace representatives in school activities, teachers must be able to articulate clearly about school-to-work so that these individuals understand what their

involvement with the schools will be and how it will benefit them and the students. Teachers must also be able to relate to students why workplace representatives are involved with the schools and what benefits they will gain from them.

Interviewees' perceived the teacher characteristic of Communicate Effectively about School-to-Work Programs as important for the following activities: (A1) Involving Students in Organized Workplace Experiences, (A2) Helping Students To Understand the Workplace, (A3) Involving Workplace Representatives in School Curriculum and Instruction, and (A8) Initiating and Maintaining Contact with Employers and the Community.

C5. Be Adaptable and Open to Change

Being adaptable and open to change was a teacher characteristic regarded as essential in helping students understand the world of work. To offer students school-based experiences that mirror the workplace, teachers must understand that requirements for workers in today's and tomorrow's global workplace are not the same skills that are typically emphasized in school settings. Teachers must be open minded. They cannot adopt the attitude of this is the way I learned, this is the way I have always taught, and this is the way I will continue to teach.

Including a workplace focus in instruction requires that teachers bring new workplace information to their classrooms and emphasize the development of skills students need for today's workplace. In many workplaces, change is constant. If teachers intend to respond to workplace expectations, they must be willing to change their instruction whenever necessary so it continues to align with what their students need to transition to work.

Interviewees perceived the characteristic of Be Adaptable and Open to Change as important for the following school-to-work activities: (A2) Helping Students To Understand the Workplace, (A4) Providing Workplace Experiences for Students Through School Activities, (A5) Including a Workplace Focus in School Instruction, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C6. Demonstrate Positive Attitudes Toward Work

Placing a classroom focus on work requires that teachers view work positively and appreciate the contributions that workers of all types make to society. If students learn through teacher role models that work is to be valued and is a major contributor to community growth and stability, they will develop a positive view of work themselves. Teachers must help their students value the various roles they will assume in the workplace.

Further, having a positive attitude toward work is essential for teachers to maintain positive relationships with workplace representatives. Through interactions with the workplace and personal work experience, teachers gain an appreciation for the contributions workers make and the importance of these contributions. This appreciation plays an important role in helping students transition to work.

Teachers' attitudes toward work are often imbedded in what they teach. If teachers can incorporate positive attitudes toward work into their classroom instruction, students have greater potential to develop these attitudes. Conversely, if teachers demonstrate negative attitudes toward work in their classroom instruction, students may adopt these attitudes themselves.

From the interviewee's perspectives, the teacher characteristic of Demonstrate Positive Attitudes Toward Work was relevant for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences, (A2) Helping Students To Understand the Workplace, (A3) Involving Workplace Representatives in School Curriculum and Instruction, (A5) Including a Workplace Focus in School Instruction, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A7) Working in the Workplace, (A8) Initiating and Maintaining Contact with Employers and the Community, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C7. Be Professional in Appearance and Conduct

Teachers serve as role models for their students in both appearance and conduct. Building on workplace expectations, teachers can incorporate into their instruction essential aspects of both. Further, by exemplifying on a day-to-day basis workplace expectations for

appearance and conduct, teachers can provide relevant examples for their students to follow in shadowing, internships, and other related workplace experiences.

When teachers are representing the school and contacting the business community, they are serving as representatives of the schools and are role models for what businesses, industries, and the community think about schools. Teachers must understand what the workplace expects in terms of personal appearance and conduct and abide by these standards. Ignoring these expectations can offend workplace representatives who are needed to help students successfully transition to work.

Interviewees' perceived the characteristics of Be Professional in Appearance and Conduct as important for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences, (A3) Involving Workplace Representatives in School Curriculum and Instruction, (A8) Initiating and Maintaining Contact with Employers and the Community, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C8. Apply School Learning to the Workplace

Teachers must recognize the importance of linking school-based learning to the workplace and practice this concept in their teaching. Students often have difficulty connecting what is being taught in the classroom with the real world. Whenever feasible, vocational and academic teachers must connect their instruction with one another and with the workplace. Learning in context helps students grasp the relevance of what they are learning. Emphasis on applied learning helps students understand why they are learning and how they are going to use what they have learned.

The school and the workplace are much like a two-way street. Just as the workplace can drive what is taught in school, the school can be a starting point for what is eventually applied in the workplace. Linking school-based learning with the workplace is an essential teaching skill. Knowledge, attitudes, and competencies teachers gain from work experience can facilitate the creation of this link.

Interviewees perceived the characteristic of Apply School Learning to the Workplace as important for the following school-to-work activities: (A2) Helping Students

To Understand the Workplace, (A4) Providing Workplace Experiences for Students Through School Activities, (A5) Including a Workplace Focus in School Instruction, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A7) Working in the Workplace, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C9. Know Schools and Schooling

Having a broad understanding of schools and schooling is essential to success in organizing workplace experiences for students. Questions potential employers have about students may focus on what math, science, and communication skills they have developed in various courses; what workplace experiences they have already had; and what benefits will accrue for employers who become involved with school-to-work activities. As teachers interact with the workplace, they must know what is going on in their own program areas as well as the whole school, particularly in respect to any school-to-work activities underway.

Interviewees perceived the teacher characteristic of Know Schools and Schooling to be relevant for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences and (A8) Initiating and Maintaining Contact with Employers and the Community.

C10. Be Knowledgeable and Competent in Teaching Area

In an ever-changing technological world, teachers must be "lifelong learners." As they learn about the workplace, teachers must link this learning to their teaching. They will then be able to transfer knowledge and competence gained through their "lifelong learning" to their students. In addition, teachers must know how their content relates to the world of work and be competent in teaching to students' needs, which goes beyond teaching isolated subject matter. If teachers are to design quality school-based learning experiences, they must be truly knowledgeable about their teaching field as well as competent in their teaching. However, unless they link this knowledge and teaching competence with workplace expectations, the relevance of their school-based instruction may be lost.

Teachers cannot teach 1930s skills to help students transition to work in the 1990s. Through ongoing work experience and contacts with business, industry, and community

representatives, teachers can keep current in their teaching area. If their classroom instruction is to reflect up-to-date workplace trends, teachers cannot rely on personal workplace experiences that are from 25 years ago.

From the interviewees' perspectives, the teacher characteristic of Be Knowledgeable and Competent in Teaching Area was relevant for the following school-to-work activities: (A2) Helping Students To Understand the Workplace, (A5) Including a Workplace Focus in School Instruction, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A7) Working in the Workplace, (A8) Initiating and Maintaining Contact with Employers and the Community, and (A9) Designing Classroom Experiences Around Workplace Expectations.

C11. Be Creative and Innovative in Teaching

Providing a workplace focus to instruction requires that teachers' attitudes about teaching be based on flexibility and creativity, not on the traditional comfort zone mentality that "I teach a specific subject." In achieving a creative, innovative focus, teachers must use a variety of instructional strategies, including role playing, case studies, debates, interviews, portfolios, individual and team assignments, simulations, group projects, field trips, and integration of instruction across disciplines. Central to these strategies is the need for teachers to take risks and find a variety of ways to recognize students with different capabilities and learning styles.

Creating contextual learning experiences that allow students to simulate workplace requirements can prove more difficult than teaching from texts and lecturing. Through work-based projects and enterprises, teachers can provide in school settings experiences students will actually encounter in the workplace. However, providing students these experiences requires that teachers have first-hand knowledge of the workplace that is continually updated. Creative, innovative teaching requires that teachers maintain a progressive outlook and be willing to "get out of the box" in their teaching methods, while at the same time constantly monitoring the learning of their students.

Following up on current and former students indicates a major commitment to quality teaching. Teachers who visit with their students in the workplace gain an understanding of workplace requirements and expectations their students must meet.

Follow-up activities consume time above and beyond daily teaching. However, teachers who are innovative focus on how the extra time they spend will benefit their students and themselves.

Interviewees perceived that the teacher characteristic of Be Creative and Innovative in Teaching was relevant for the following school-to-work activities: (A1) Involving Students in Organized Workplace Experiences, (A2) Helping Students To Understand the Workplace, (A4) Providing Workplace Experiences for Students Through School Activities, (A5) Including a Workplace Focus in School Instruction, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, (A9) Designing Classroom Experiences Around Workplace Expectations, and (A10) Following up on Current and Former Students.

C12. Be Committed to Teaching

Successful school-to-work teachers are committed to learning in order to become better teachers. They can learn about the workplace by participating in Back-to-Industry programs, summer employment, and maintaining workplace contacts throughout the year. Continual learning about the workplace enhances teachers' abilities to relate to students' workplace needs.

Teachers must have a commitment to students' learning if they are to help them understand the skills and competencies needed in the workplace. Further, they must display enthusiasm about the workplace and believe that every student can and must become a contributing member of society. Teachers demonstrate commitment by maintaining a positive attitude and tailoring their teaching strategies to meeting individual students' needs. Committed teachers give unselfishly of their time and themselves.

From the interviewees' perspectives, the teacher characteristic of Be Committed to Teaching was relevant for the following school-to-work activities: (A2) Helping Students To Understand the Workplace, (A6) Learning about the Workplace in Ways that Contribute to Better Teaching, and (A8) Initiating and Maintaining Contact with Employers and the Community.

IMPLICATIONS

The study findings contain statements from interviewees that offer support for ten school-to-work activity themes and twelve school-to-work characteristics teachers need to conduct successful school-to-work activities. A discussion in which the relationship of the needed teacher characteristics to the activities has also been provided. To guide the discussion, we created a matrix that aligns needed teacher characteristics with activity themes, using characteristics that best fit each activity. Thus, the discussion provides a framework for using the information obtained through the interviews.

The following are implications for the use of the findings from this research for four target groups: (1) practicing teachers, (2) prospective teachers, (3) administrators, and (4) persons in the workplace. Implications address the ways each group can use the findings to better facilitate students' transition from school to work.

Practicing Teachers

Teachers of vocational and academic subjects can benefit from examining the findings and assessing how their own knowledge, attitudes, and competence compare with those needed to conduct school-to-work activities. The essential teacher characteristics and examples of their use can serve as a model for developing the characteristics. Through the actual statements of the interviewees, teachers can learn how they can establish and maintain positive relationships with people in the workplace, how they can simulate workplace experiences in their own instruction, and how they can help their students gain first-hand knowledge of the workplace. Further, they will find extensive support for the importance of work in students' lives and the importance of future work contributions for each and every student.

The matrix can help guide teacher use of the findings. For example, if a school is about to undertake a specific type of school-to-work activity, teachers can refer to the matrix to determine what talents are needed to complete the activity.

Prospective Teachers

Prospective teachers can also benefit from examining the study results. Teacher educators can use the matrix to assist prospective teachers in learning about the school-to-work activities. This information can help teacher educators develop programs so that prospective teachers learn about characteristics they will need to conduct school-to-work activities successfully. Comments provided by interviewees can serve as the basis for developing role-playing situations in teacher education programs where prospective teachers practice use of the characteristics they will actually use when they are involved in school-to-work activities. Through role-playing, prospective teachers can analyze why various behaviors may be perceived as both helping and hindering school-to-work efforts.

Prospective teachers will also benefit from reviewing the site descriptions provided in the appendices. The descriptions can provide insight into the depth and breadth of school-to-work activities underway at the eleven exemplary sites.

Administrators

Administrators who review the findings and accompanying discussion will quickly realize the importance of involving all teachers in school-to-work activities and of providing school-to-work opportunities for all students. Particularly important for administrators is providing opportunities and time for teachers to interact with persons in the workplace. Additionally, administrators need to provide opportunities for teachers to work in professional teams, especially teams that include workplace representatives. As the findings reveal, successful school-to-work programs require both the commitment and the cooperation of all school personnel.

Administrators need to serve as role models for teachers. Through their actions, administrators can set the stage for teachers to follow. They usually have greater opportunity than teachers to interact with workplace representatives and need to do so in a positive manner. Throughout the findings, administrators can find examples of how important administrative support is to teachers who are involved in school-to-work activities.

Persons in the Workplace

Persons in the workplace can also benefit from examining the findings and the discussion. These people will gain a better understanding of the complexities teachers encounter when conducting school-to-work activities. For example, workplace representatives stated that they had concerns about teachers focusing only on their own subject matter and not having a realistic perspective regarding today's and tomorrow's workplace. People in the workplace should also recognize what teachers' concerns regarding school-to-work transition are and how teachers can be assisted in conducting successful school-to-work activities. The opinions of workplace representatives and roles they play in implementing school-to-work activities are critical to school-to-work success.

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APPENDIX
COMMUNITY PROFILES

COMMUNITY PROFILES

Site One

Site one is a rural county located in the southeast with a population of 37,000. The senior high school serving the county was founded in 1972 and received the National Excellence in Education Award in 1985. The 1993-1994 high school enrollment was 1,279 students. The racial make-up of the school population is 91% white, 5% black, 1% Asian, 1% Hispanic, 1% Native American, and 1% other. After completion of high school, approximately 34% of the high school graduates join the workforce, 35% enroll in a community college or technical school, the remaining 31% either pursue military careers, attend four-year colleges and universities, or become homemakers.

An award-winning dropout prevention program was established in 1975. This program includes the Extended School Day Program which offers both vocational and academic courses from 3:30 until 8:00 p.m. daily for students who cannot or choose not to attend school during the regular day.

Students experience exposure to vocational offerings in the 7th and 8th grades, with exploratory courses introducing them to employment options and basic skills. These courses allow students to spend time in several different vocational labs at the middle school level. Math, science, and language arts skills are emphasized in combination with hands-on activities focusing on work examples.

The high school offers a broad selection of vocational programs that prepare students for life skills, college, or entry into specific jobs. Local businesses and industries provide support for vocational education by employing students after hours and in the summer. Business and industry representatives contribute many hours of volunteer work to the local schools by conducting tours, running a speakers bureau, providing shadowing/mentoring programs, and serving on vocational advisory counsels.

The Chamber of Commerce has a long history of support to the public schools. The leadership provided by the Chamber of Commerce has resulted in active business and industry involvement and support of the education program for all children. Special committees have been appointed to assist schools with administrative procedures, long-range planning, curriculum suggestions, and strategies for meeting the needs of at-risk

students. Leaders from business, industry, the Chamber of Commerce, an area community college, and the public schools have developed a plan to keep the public informed about the value of completing high school. Through the efforts of this committee, strong incentives have been developed to encourage academic achievement, attendance, and to provide monetary rewards for staying in school. More than 100 business, industry, and local government officials have signed a formal agreement to encourage students to stay in school until they graduate. This seven-point document includes a pledge to provide encouragement and special education and training opportunities for all employees. Many employers are providing in-house opportunities for Adult Basic Education and GED preparation.

School-to-work activities include shadowing opportunities for all seniors. Shadowing offers an opportunity to spend a school day or longer with a person who serves as a career model in the area of the student's career interest. To participate in this activity, students must fill out application forms, and permission forms must be completed by their parents or guardians. A post-shadowing report must be completed by the student and turned in to the vocational director within a week after completion of the shadowing.

Many teachers participate each summer in the Back-to-Industry project developed through cooperation of the Chamber of Commerce, business and industry leaders, the community college, and the public schools. Through the Back-to-Industry project, teachers of vocational and academic subjects are provided an opportunity to spend one week in a local business or industry to develop a practical knowledge of skills required of prospective employees.

Site Two

Site two is a rural area in the midwest, consisting of a vocational-technical center and 18 feeder schools. The center strives to meet the training needs of the area by enrolling adult students as well as students from the feeder schools. The center has twenty-five teachers and ten assistants; its daytime curriculum includes twenty-four career preparation programs. Each program is 1,050 clock hours in length. To complete a program, students must attend one-half day sessions for two school years. Adult students may enroll on an open-entry/open-exit basis for one-half day sessions, or where openings exist, two half-day sessions (all day).

The center enrolled 2,078 students in the Spring 1995 semester; 569 were high school students and the others were in adult programs. This includes 27.3% of available students from the feeder schools. Secondary students in the 11th and 12th grades have first enrollment priority in all of the 24 daytime programs, except horse production and management which gives enrollment priority to adult students. All of the 24 daytime programs except cosmetology are open to adults.

All students who successfully complete their training programs receive certificates of completion, listing the areas of training, and the level of competence achieved. Thirty percent of students have paid jobs related to their occupational areas. Students are also offered leadership activities, including Vocational Industrial Clubs of America (VICA), Distributive Education Clubs of America (DECA), and Future Business Leaders of America (FBLA).

The Educational Enhancement Center at the vocational-technical center provides the opportunity for students to receive extra help with reading and math skills that are necessary for successful completion of their education. The Displaced Homemaker/Single Parent program is available to qualified adult students to assist them in reaching their personal and career goals.

School-to-work activities include the Back-to-Industry program where teachers are given opportunities to shadow in local businesses for a week. Teachers feel this industry training keeps them motivated to teach the students and keeps them aware of exactly what industry expects of employees. Other activities include field trips to local industries and guest speakers from industry. In the classroom, students complete projects that involve researching careers and are given opportunities for role-playing of various careers. An on-site construction project provides for participation of students from a number of programs. The students build a house from the ground up. When completed, the house is sold and moved from the center. The money provides funds to begin a new house the following year. Other school-to-work projects include an intern program at a local bank. The nursing program offers nursing home aide experiences and students can work toward LPN degrees.

In addition to the school-to-work activities in which the students are involved, the center also offers weeklong summer orientation sessions for teachers from the feeder

schools. These sessions give teachers from the feeder schools and the vocational center the opportunity to work on activities that integrate vocational and academic curriculum.

The vocational center serves a rural area whose major employers are manufacturing, including an auto parts manufacturer, a trailer manufacturer, and an electric submersible pump manufacturer; government services; educational services; transportation and public utility services; medical services; financial institutions; real estate; mining; construction; retail trade; wholesale trade; and over thirty horse-breeding farms and ranches.

Site Three

Site three, a technical college located in the upper midwest, has a school-to-work vision that emerged as a guide to bringing a new direction to the learning process. This vision has aided in creating a workable and productive relationship among K-12 schools, postsecondary schools, workplaces, and the community. The vision has changed "the way school is done" at the college and the surrounding area schools.

The advanced delivery system has been restructured to engage all students in experiential learning so they can master academic skills in a real-life context. Teachers involve students in active and constructive learning, drawing heavily on cooperative learning strategies and opportunities.

School-to-work offers school-community connected experiences that relate academics with workplace learning. These community/work-based experiences begin in middle school since it is in the middle school years that students are earnestly evaluating their options, including whether or not to drop out of school. A strong career information emphasis is included throughout the elementary school experience, as it is during the elementary years when parental involvement in the education process is highest. This time period, therefore, offers the best opportunity for fully informing parents of the choices that will be available and to shape parental expectations of school-to-work benefits for students, parents, and community. The goal is to provide for a smooth and informed transition from the elementary level to the increased school-to-work activities in middle school.

Efforts are made to soften the line normally drawn between the twelfth year of K-12 and postsecondary education or the world of work. Youth apprenticeships, mentoring, and

job shadowing are just some of the ways of helping students in that transitional process. Additionally, effective counseling plays a key role in the transitional efforts of students.

Implementation of school-to-work requires strong central leadership. School-to-work can neither be implemented nor maintained without participation of the regional workplace community and the community at large. A consortium of business, industry, and community persons has been established to serve as support and accountability agents for school-to-work. School faculty and staff development has included training in cross-disciplinary integration, inquiry learning, team teaching, and cooperative learning. Workplace/community mentors who serve as trainers also need special training, some of which occurs along with the school-site training of faculty and staff. Counselors are also provided with school-to-work related professional development preparation.

Training and orientation sessions are made available for parents. Further, utilization of traditional methods such as district and individual school newsletters and bulletins are augmented by communications through electronic means and various aspects of the media, including short segments developed for showing at local theaters.

Youth apprenticeships are two-year programs (grades 11-12), which explicitly link high school students with business and industry through school-to-work integrated studies and work-based learning experiences. In the youth apprenticeship program, content is integrated by combining rigorous academics and vocational and work-based experiences into four semesters. The programs require students to participate in summer employment between grades 11 and 12. The 11th- and 12th-grade experiences for students follow an integrated studies curriculum in grades 9 and 10, which also integrates academics and vocational education, but not with the industry-based specific competencies identified for grades 11-12.

Two-year apprenticeship programs are offered by the county in the areas of graphics arts, financial services, and biotechnology. The school-to-work coordinator at the community college has implemented these programs in cooperation with the school districts. The community college assists in the recruitment of students and businesses as well as trains the instructors who deliver the curriculum related to each specific program. The competency-based curriculum for each of these three apprenticeship programs have been developed by industry members. Thus, the focus of the student apprenticeship

programs is on the industry in the broad sense. Students gain a wide knowledge of all aspects of that particular industry, as well as pertinent workplace skills and competencies.

Site Four

Site four is a vocational-technical center in a developing industrial and technology area. The center serves 480 secondary students and 270 postsecondary students. Advisory committees, composed of representatives from the business/industry community, are in place for each program area. The technical center has been created as a partnership between a state college, a local school district, and the community in order to provide quality technical/vocational education. Governance of the center has been assumed by the Board of Cooperative Services, which has representation from the local school board, the board of trustees of the college, and members of the community.

Quality technical training is geared toward the student as an individual, whether the student is an employee retraining for new skills, a returning student, or a new student seeking career guidance. Many courses may be taken in a self-paced format, where students can begin courses anytime during the semester. Labs are open all day and, in some programs, into the evening hours to allow flexibility for students who also work. Clustered learning allows students to obtain broader skills through cross training in related skill areas. Providing the students a variety of skills improves their career opportunities.

Students have access to career counseling, interest and ability assessments, career resources, and an information library. Other services include academic advising, tutorial assistance, and employability training.

Many students are placed in internships with area businesses. Workplace learning provides a beneficial complement to the student's technical education at the center. Through their workplace experiences, students get hands-on experience in state-of-the-art technology, as well as exposure to various aspects of business in their career field.

A number of secondary and postsecondary programs are offered at the main campus, including autocollision repair technology; electric lineworker; electronics technology; graphics communications; health occupations; manufacturing technology cluster, with programs in computer-aided drafting (CAD), machining technology, and

welding technology; marketing education; and transportation services cluster, with programs in automotive repair technology and heavy equipment and diesel repair.

In addition to the main campus, the career center campus offers programs in child care occupations, computer applications, construction technologies, culinary arts, horticulture, and video productions. The high school campuses offer courses in agriculture education, business education, consumer and family studies, and consumer wage-earning occupations.

High school students are also offered a program in health occupations which develops skills required for beginning work in various health care occupations, including nurse assistant, home health aide, laboratory aide, dietary aide, ward clerk, central service aide, physical therapy aide, optometry assistant, and others. This course provides a strong lead for students into two- and four-year postsecondary health and medical programs. First semester involves classroom experiences and observations. Second semester includes an on-the-job training experience in one of the community's health care facilities. Students are prepared for careers in physical therapy, emergency care, nursing care, and home health aide.

Graphic communications students are provided the knowledge necessary to produce printed communications. Completers of this program obtain entry-level employment skills in graphics design, computer graphics and desktop publishing, typesetting, paste-up, plate preparation, process camera operation, and printing press operation used in commercial and in-plant print shops.

Auto Collision Repair I and Repair II classes are offered at the high schools with college credit available. Repair I students learn practical applications, including all phases of body and fender repair, gas welding, a comprehensive unit in auto painting, and related applied mathematics. Repair II training includes auto body repair, auto painting, and some frame and unibody repair. In-depth knowledge and skills are gained by students as they work on customer-owned vehicles.

The welding technology program is an integral part of the manufacturing cluster. Along with the emphasis in welding, students are provided the opportunity to learn skills in machining, fluid power, pneumatics, robotics, CAD, properties of materials, and basic

electrical theory. This course is designed to prepare the student for entry-level placement within a range of manufacturing employment opportunities. The curriculum for this course is the same as used at the postsecondary level; thus enabling the student to transition into the college system without duplicating required competencies. This course uses competency-based standards set by industry, and is open entry/open exit. Credit is awarded on a performance basis.

The transportation services cluster, which has an emphasis on heavy equipment/ diesel, is designed to instruct students in shop safety; proper use and care for tools and equipment; and the theory of diesel engine operation, components, and repair. The principles of electrical systems, hydraulic systems, power trains, brakes, and other related components are studied with emphasis on diagnosis, maintenance, and light repair as it applies to heavy equipment. College credits are available.

Students with such career interests as service shop technician, manufacturing technician, laboratory technician, field service technician, engineering assistant, technical writer, or technical salesperson may enroll in Electronics I and Electronics II. Upon completion of the program, these technicians may be employed in the computer industry, communication industry, manufacturing industry, bio-med field, and retail sales.

Site Five

Site five is one of the first partnerships created under the 1994 School-to-Work Opportunities Act. United Parcel Service (UPS), a Fortune 500 company, five colleges, and the local school systems have forged this unique partnership as a state and national model for seamless education that bridges the gap between school, work, and postsecondary education.

A consortium of representatives from secondary and postsecondary institutions, including administrators, counselors, teachers, and representatives from UPS, began meeting in February 1994, to develop a pilot program to coincide with the nation's focus on school-to-work transition and school reform. The consortium sought a winning solution to meet the needs of youth and the workplace.

The purpose of the partnership is to develop cooperative ties between the educational and economic communities so that strong instructional curriculum can be established that prepares students for a variety of career opportunities, and to meet the increasing technical demands of the workplace.

Community college teachers developed the curriculum for the partnership to make use of students' work experience. Five community colleges and five school systems worked together to develop the partnership. Through flexible, part-time jobs, UPS gives high school seniors the opportunity to work part-time, finish high school, take nine UPS supported community college credits at the worksite, and help in obtaining low-interest college loans.

An on-site reading specialist sits in on all community college classes offered at the worksite to offer students assistance with classwork. The specialist also serves as a liaison between each student's work experience coordinator and counselor at the high school by faxing review materials to the school.

The community college classes on-site use experiences and opportunities from UPS as part of the curriculum. For example, the class Principles of Supervision links classroom learning with UPS's total quality programming and with the supervisory and team experiences students will have on the job. Three college courses are offered to students at the UPS center: Introduction to Business, Principles of Management, and Principles of Supervision.

Forty high school seniors participated in the program the first year it was implemented. Program expansion to 200-300 seniors is anticipated. Students enrolled in this unique program are provided textbooks, tutorial services if needed, and worksite mentors. Extensive school and work coordination is an ongoing process. Students earn $8.00 per hour and opportunities are available for students to progress into company management positions.

Students benefit from the partnership in a variety of ways. A part-time job with a reputable employer gives students valuable workplace experience, a sense of responsibility, and the opportunity to learn valuable skills essential in successful academic or business careers. Students are better prepared to

- face future workplace demands.
- seek higher standards of academic achievement.
- demonstrate and refine workplace skills necessary to be productive citizens.
- acquire the skills and advanced education that will enable them to move from entry-level to management level positions.
- develop a clearer and specific sense of career objectives and goals.

Educators also benefit from the partnership. It provides them a functional and successful model for school-to-work transition. By combining classroom study and the reality of the workplace, the effectiveness and relevancy of education can be increased. Educators have

- expanded alternatives for in-school curriculum and options for students.
- an avenue for private sector involvement and assistance in keeping curriculums up-to-date.
- an opportunity to develop a strong and positive relationship with the local business community.

UPS benefits by having a pool of qualified candidates for part-time employment as its staffing needs are on the increase. UPS realizes that the involvement of business in the area of educational reform is necessary to ensure a better prepared future workforce. UPS is

- active in integrating academic instruction with work experiences.
- provides an environment to cultivate and nurture potential part-time supervisors and full-time management candidates.

This unique partnership has proven to be beneficial for all stakeholders. But most important, it is providing meaningful school-to-work opportunities for students.

Site Six

Site six, a vocational center serving seven high schools, is located in an industrial city. School-to-work activities at site six are ongoing. This site views its mission "as removing any barrier to students' educational success." To establish a network of cooperation between the student, the home, and the stakeholders from business and industry, strong linkages have been developed between secondary schools, postsecondary institutions, industries, business, and the community.

Dropout prevention is one area of concern the vocational center focuses on. Student motivation is provided through Educational Employment Development Plans (EEDP) and Scout Teams. Each student has been assessed and tested by counselors at respective high schools and has an EEDP developed to meet that student's interests and needs. Scout Teams consist of employers who are in the center every day. These scouts serve as motivators for the students as relationships are forged between business representatives and students. Additionally, student incentive programs are provided by the center. Each month the "Most Outstanding Student" and "Most Improved Student" are honored.

Students are provided ongoing opportunities to learn more about their chosen field of interest. The center's Career Development Office offers personal counseling, special career forums and seminars, and the Career Resource Library maintains a comprehensive selection of information on postsecondary opportunities and programs. Additionally, a career expo is held annually where representatives from local businesses and industries are invited in to speak with students about educational and training requirements, as well as career opportunities available through their companies.

Students have repeatedly won bronze, silver, and gold medals in skill competitions on the local, state, and national levels. Graduates are ranked as some of the state's best prepared students by the National Restaurant Association, National Automotive Technicians Education Foundation, and the AutoService Excellence Commission.

Ongoing school-to-work activities at this site include internship programs, industry tours, guest speakers, and mentoring opportunities for students. Internships have been established with industry, especially with the "Big Three" automotive companies. Business representatives are invited into classrooms to speak with the students regarding skills needed on the job. Additionally, students experience business tours to learn first-hand what

is required to succeed in the workplace. Realizing the importance of computers in today's workplace, each program has computers equipped with appropriate software for student use.

Major emphasis is placed on helping graduates make the transition from school-to-college and from school-to-work. Career placement services include cooperative programs, practicums, apprenticeship programs, internships, the GM-ASEP program, and the Ford-ASSET program. Through a cooperative program students earn credit, gain on-the-job experience, and earn money, all at the same time. A practicum experience offers students opportunities to work with companies to gain experience, but without pay. Apprenticeship programs have been established and registered with the U.S. Department of Labor Bureau of Apprenticeship. An apprenticeship is a paid work experience in which the student completes a four- to five-year program with an employer, while also earning college credit. Internship opportunities are offered to students where students take advantage of working with companies after school or during the summer. The GM-ASEP Program (Automotive Services Education Program) is designed to produce highly trained technicians who can service and maintain sophisticated electronic and mechanical systems being included in all new GM products. Students are sponsored by local General Motors dealerships. The Ford ASSET program is a partnership between Ford Motor Company, Ford Lincoln-Mercury dealers, and the technical center. It is a two-year program designed to develop entry-level service technicians. This two-year work study experience leads to an associate degree in automotive technology.

The staff at this site are committed to teaching excellence. Staff development seminars are frequently provided by national consultants. Curricula is updated and redesigned based on instructors' close interactions with the business community and advisory committee members. Each instructor is scheduled by the center to be out in industry at least four times a year.

This site offers a balance of technical training along with academic education in the following comprehensive programs: autobody/service, cosmetology, manufacturing technology, CAD, electronics/robotics, law enforcement, meat cutting, welding, bakery, and culinary arts.

Site Seven

Site seven, a metropolitan magnet school, is strongly committed to preparing youth for the workplace through school-to-work initiatives. Students from every high school in the city are represented in this magnet school. Students must complete an application to attend and selection is based on a number of pre-set criteria. This site attributes its success to cooperation among business, labor, education, and government. The school's mission is to promote the development of an educated, skilled workforce that can compete in any market in the world and spark local economic growth into the next century.

The Chamber of Commerce provides leadership, which has resulted in business and industry involvement and support. Linking school and work are key components of each magnet program, with both the workplace and the classroom viewed as essential for preparing these urban students for future employment. Thus, employers have been made full partners in providing students quality, work-based learning.

Desiring to be on the cutting edge of the rapidly changing health care industry, this site has not only developed an extensive nursing program, but has formed a partnership with health care providers for its medical office administration program. Administrators of local health services organizations had cited labor shortages as a major problem in the city. Rising to this challenge, this site prepares workers as entry-level medical office assistants through a partnership with an insurance firm. Students are trained to prepare medical claims. The local insurance provider has set up a "dummy account" for the high school, with computers linked directly to the insurance firm. The medical forms processed by the students are checked for accuracy, exactly as those produced at the insurance company are checked.

Students participating in the medical office administration program are not only linked via computer to the world of work, but also interact with corporate sponsors through mentoring, shadowing, clinical internships, work experience, and other work-based learning activities. Realizing that in no industry is technology more significant than in health services, students are trained to complete forms on the screen, comprehend facts and information, order supplies, and send test results from labs to doctors' offices, and other sophisticated applications of computers in health-related occupations.

The Young Executive Management Program has established partnerships with a number of local businesses that provide valuable learning experiences for the students outside the classroom. One example is the KFC (Kentucky Fried Chicken) Partnership where KFC gave a mobile restaurant to the school to be used as a learning lab. Students are responsible for operating the unit from marketing to accounting—from customer service to employee relationships—and from food preparation to food sales. All income earned from sales in the mobile restaurant goes to the seniors involved in the project in the form of scholarships. These scholarships are based on the students' academic excellence and their involvement in KFC's partnership with the school.

The KFC Young Executive Management Program combines classroom skills in management, marketing, and entrepreneurship with practical hands-on experience. KFC provides the $225,000 mobile restaurant and underwrites the cost for food, paper, marketing, and maintenance so all profits can go into the scholarship fund for the students who run the restaurant. The restaurant is open for business two days a week and is in its fourth year of operation. The program has been heralded nationwide and KFC feels it is making an investment in the future workforce by forming and supporting this program with the local high school.

Educators are learning more about the workplace through the Education/Industry Exchange program in which local businesses and organizations sponsor teacher interns. Both the business sponsors and teacher interns widely praise the program. Teaching methods and curriculum changes have been inspired by these teacher internships. Further, teachers reported that they are increasing the focus on student writing skills, active listening, time management, teamwork, appropriate manners and dress, and computer skills in their classes.

Site Eight

Site eight is a technical center located in a rural area with many ongoing school-to-work activities. Each teacher at the technical center is actively involved with students in their program concerning school-to-work and transitional planning. For school year 1993-1994, the senior transitional plan statistics were as follows:

- 54% entered two- or four-year postsecondary education

- 13% entered military training
- 19% employed
- 14% active job seekers with postsecondary educational plans uncertain

Over 200 business and community members are involved with program advisory committees at the center. Each program has an active advisory committee made up of representatives from the trade area and the business community representing the trade area. These committees meet at least annually and in most cases two and three times each year. The committees provide input and help with curricula and program support. Further, they are critical to the process of developing students' school-to-work linkages. Business and industry partnerships, formed through the advisory committees, have also been instrumental in providing work-based, school-based, and linking school-to-work opportunities. In addition, they have helped implement learning activities. These activities have ranged from home building to blood drives to community child care.

Students in the early childhood program job shadow in area child-care facilities, Head Start programs, and local elementary schools. Additionally, students run an active community child-care program during the spring semester. The two classes of health careers and health specialty are directly linked to the community with school-to-work clinical experiences. Students in the health careers program work in local hospitals and nursing homes to earn their certified nurse assistant (CNA) credentials and students in the health specialty programs are engaged in actual clinical experiences in the community in specific areas within the health industry, including physical therapy, veterinarian, pharmacy, and mortician.

The human services program students learn essential work skills in support services provided to the elderly in the health care field. Students work at local boarding homes and nursing homes for the elderly in job training rotations to learn employment skills in the health care industry.

The banking program is the first school-based bank working through a local banking partnership in this state. Students are trained by bank personnel in an actual working branch bank housed at the technical center. Banking students have the option of

earning additional academic credit by enrolling in the banking work apprenticeship course. This apprenticeship course, taken in addition to the banking program, is for students who are working in a financial institution outside of school as part of a school-to-work apprenticeship training program.

The carpentry program has built "Good Cents Homes" in partnership with a lumber company and the electric company. Through the program, students are currently involved in building classroom modules and an athletic complex for the school district. Students in electricity and the trade career cluster are also working on these projects. Further, the trade career cluster program uses community-based projects as its major emphasis curriculum focus. Linkages between school and work has enhanced student learning opportunities. Some activities these students have been involved with include foundation work, roofing projects, vinyl siding and window replacement, landscaping, and a camp skirting project.

The culinary arts program runs both a coffee shop and a lunch restaurant open four days weekly to the public. This link between school and work with service to the community provides real-world employment training for the students.

Students in the autobody and collision repair program experience working in area body shops and specialty shops. These community-based sites within the industry give second-year students an opportunity to experience work-based learning. Students also have the option through this work-based learning model to rotate to various job sites within the industry during their second-year.

Students in the law enforcement program (LEP) have several learning and instructional experiences with local, county, and state law enforcement agencies. For example, LEP students use the firing ranges at local police departments for shooting instruction and target practice and they are involved in a ride-along program with local police departments, the county sheriff's department, and the state police. Additionally, the LEP has an active and effective partnership with the Army National Guard. This program provides training for youth interested in the law enforcement field by utilizing the expertise of the guard. Students are exposed to actual military training aspects and are involved with the guard in a positive linkage between school and the community. This partnership includes a ten-year contract with the National Guard to use the guard armory facility for program training and development for students. Additionally, the technical center in concert

with the Army National Guard, has developed a heavy equipment maintenance and operation program to be housed at the guard armory utilizing guard facilities for training and instruction.

Several other options are offered to provide school-to-work activities for students. Currently, seven students are involved in a pilot of the youth apprenticeship program. In addition, students are offered work options under the jobs for graduates program. This program has a senior school-to-work program that serves 35-45 high school seniors helping them develop job readiness skills and strong job-seeking and keeping skills.

Solid connections with work also include the activities of the student organizations. From the organizations, many students have competed at the state and national levels as well as had the opportunity to serve as representatives. These youth leadership opportunities, coupled with local organization participation, enhance students' self-esteem and further facilitate positive linkages between students, school, and work-career development.

The technical center is a school that recognizes students as whole human beings. In this context, the center has an infant care center that serves teen mothers, providing them with child-care support and parenting skills development while they are in school; thus, helping them stay in school, gain their education, and move forward in positive ways. Additionally, students are offered an on-campus wellness program. The wellness program is staffed by a nurse practitioner and support staff and is open daily during the school week from 7:30 am to 3:00 p.m. All students in the vocational center as well as the high school students may receive services from the student wellness center.

The critical importance of technology in the area of workforce education is recognized by the center. To this end, the center has developed a computer network utilizing a Novel Network file service as the backbone of its technology thrust. Over 200 computers are networked together in classroom labs, mini-labs, and individual computer configurations which share information and peripherals. The next stage will be to develop an Internet lab to link to the outside world and community resources. These advances and applications of technology and computers are critical to the continued growth of the center and success for the students.

Site Nine

Site nine is spearheaded from a community college located in a once economically depressed area of the midwest. This district's school-to-work initiatives began in 1989 when business representatives from two local industries approached the president of the community college with serious concerns about the workforce. At that time about 40% of the manufacturing workforce in the county would be eligible for retirement within ten years. The plant managers had two questions: Would workers be available to replace the retirees? Would those replacement workers have the skills they need for the technological workplace of the 1990s and beyond?

During meetings the following spring between college officials and business, industry, service, and other community leaders, more concerns about the workforce became apparent. From these early discussions, diverse sectors of the community joined to form Workforce Challenge 2000, which has led to numerous school-to-work initiatives being implemented. An education summit held in February 1991 brought together junior high and high school teachers and administrators to talk about how education must change to meet the needs of a changing world. A second education summit for all area educators occurred in October 1991. Committees were formed and priorities were established.

Because the area has suffered through harsh economic times, many high school and college graduates believed they must leave to get good jobs. However, with business expansion based on a well-prepared workforce, 31 local businesses anticipate needing about 5,250 new employees by the year 2000.

To address workforce development concerns, Workforce Challenge participants established five goals. The first was to conduct a community awareness program for the Workforce Challenge initiative. As a result, continuous evaluation of local employment opportunities are conducted, with better communication between government agencies, business and industries, and education. An information file is maintained that can be used for speeches, pamphlets, fliers, videos, and so on. Additionally, a speakers bureau was formed. Informing counselors, teachers, students, and parents about changing opportunities in the local and global workforce is a major thrust of the awareness goal.

The second goal is to assist educators in better preparing students to meet the workforce needs of the community. Some ongoing activities that support this goal are the

use of advisory boards, with representatives from business, industry, and labor, in the curriculum review processes. The community college serves as a regional training center for curriculum development and inservice training for Workforce Challenge.

Career development activities have been incorporated into every level of the educational system on an ongoing basis. Job shadowing, plant tours, mentoring, and internship programs have been incorporated into the local school systems. A Directory of Services has been developed, with 105 businesses willing to share and help with education. An apprenticeship program has been implemented at one of the local industries, with students beginning this program in their junior year. The students go through manufacturing technology courses at the vocational-technical center and at the community college. During each summer, the students work at the local industry with this business paying for their associate degrees. Students are expected to work full-time for the business for at least two years or reimburse the cost of their degrees.

Workforce training begins long before high school. The Workforce Challenge "Elementary Educators Task Force" was formed so that local elementary school teachers and administrators can ensure that their students begin preparing for the workplace of the future. Kindergarten through postsecondary students learn the foundations and competencies needed in the workforce. In the middle school, 8th graders are provided with monthly one-half day career awareness sessions. Each session begins at the community college, with a panel of businesspeople discussing the day's topic. Then the 8th graders spend about two hours visiting local businesses, either alone or in pairs. At the end, the students return to the college to share their experiences with one another. The students are also expected to report back to their classmates at their home schools about what they have learned. Additionally, area-wide job fairs and career days have been implemented to assist students in discovering their career interests.

The third goal of Workforce Challenge is to increase the collaboration and investment between education and businesses and industry. To meet this goal, a program called "Adopt a School" facilitates the formation of school-business partnerships. Realizing the crucial role that parents play in students' success, employers are encouraged to enable employees who are parents to participate in school activities, with parents allowed "parent visitation" time similar to personal leave days for pre-arranged school functions. To further meet this goal, business and industry personnel are brought into the classroom as guests

and speakers. Speakers stress hiring needs, required skills, and the relationship between school and employment. They also stress the negative effect such behaviors as drug use might have on employment. Another interesting twist to the traditional shadowing are "reverse shadowing" opportunities, allowing workers to follow students in school and explain how various classes might relate to the work they do. A "Community Resource Guide to Education" has been distributed to all teachers in the district. The guide provides information about speakers, tours, and other business/industry resources.

The fourth goal of Workforce Challenge is to increase the involvement of parents in preparing their children for education and employment. "Parents' Day" and "Grandparents' Day" have been held at many of the local schools. A homework hotline and activity hotline—tape-recorded messages parents can call to keep up-to-date on what is happening at their children's schools—have been implemented at some of the schools. Other communication methods include newsletters, personal messages, and Parents 2000 Workshops. These workshops are a proactive partnership serving as an information exchange between parents and educators. Some of the information provided at the workshops include the nature of the job market in the year 2000, the type of education that will be necessary to find employment in the year 2000, financial aid, and curriculum choices for students.

The fifth, and final, goal of Workforce Challenge is to increase the involvement of human service agencies in preparing their clients for education and employment. The objective of this goal is to bring functionally unemployed and newly displaced workers back into the workforce as productive employees. To meet this goal, adults with long histories of unemployment and poor work histories are provided opportunities to learn the skills they need to secure employment. A student assistance program is provided, with human service professionals available to assess student needs, intervene in crises, and refer children and/or families to needed services. A community assistance referral network was established through the United Way office.

In conclusion, Workforce Challenge has evolved from the conceptual stage into an active force in the community. The initiatives begun will continue growing and expanding as they adapt to changing workplace needs. The director of Workforce Challenge emphasizes that this is a countywide effort that owes its success to community partnerships.

Site Ten

Site ten is a comprehensive high school in the northwest. The school district's school-to-work program has grown out of a desire to increase student expectations and to integrate curriculum so students can see the relevance in what they are learning. Guiding the school-to-work efforts at this site are educators, advisory committee members from each vocational program, industry representatives, labor union representatives, parents, and community members.

Students are actively involved in the workplace and in the community. They have served as interns with a major aircraft manufacturing industry, as well as several other local industries, and at the local hospital. Students are interviewed for these internship positions and are chosen based on a number of factors, including professional dress, communication skills as assessed by the interviewer, and teacher recommendations.

School-to-work activities are offered through the following programs: manufacturing and technology, business and computer applications, cosmetology, housing and design, health and human services, and family life. An additional program offered at the school is "Seaward Bound," where students interested in occupations dealing with ships or the waterfront can learn the skills needed. Students who earn occupational certification work on cruises in the summer and earn enough money to support themselves in college for the upcoming year.

Ongoing school-based enterprises, where students are learning workplace skills in a school-based setting, include a school store and a school newspaper. The business department has an advanced graphics program that does publications for various business and community organizations. Students are also offered leadership activities through school organizations, including VICA, DECA, and FBLA. Teams from the school have been state and national winners in various competitions.

Through the PIPE (Partners in Progress in Education) program, partnerships have been established with local businesses providing students with shadowing and internship opportunities. Through these close alliances with the business community, other school-to-work activities are provided to help students understand the workplace. Field trips are scheduled to local industries and guest speakers from businesses and the community are regularly invited into the classrooms. Teachers often invite speakers from businesses and

industries to come into their classroom to tell how a particular unit of study will be used in the workplace. For example, when the English teacher teaches technical writing, representatives from business relate to students how they use technical writing in their particular jobs. Additionally, every year the school sponsors a career fair where students can learn about local businesses and job opportunities.

The career specialist keeps students informed about school-to-work opportunities as well as assisting them with long-term goals. Students are exposed to opportunities in the world of work and participate in seminars and workshops on various topics, including cultural diversity and women in nontraditional roles. The school embraces the philosophy that the more information students have, the better career decisions they can make.

A reward program has been implemented for honor students based on their grade point average (GPA). At the end of each grading period, students are issued a card, similar to a credit card, which entitles them to discounts at local businesses. Different color cards, with differing rewards, are awarded to students according to their GPA. An additional card is offered to students who improve their GPA by .5. This program is financed by local businesses.

In addition to student school-to-work opportunities, this site stresses quality staff development. Many opportunities are given for teachers to spend time in the workplace to see first-hand what is going on in the local industries and to learn the types of skills that students need if they are to be competitive in the job market. Teachers are involved in continual learning.

Site Eleven

Site eleven is a predominantly Hispanic high school located in the southwest. This site has formed a partnership to lead a school reform initiative which provides opportunities for all students to achieve higher levels of academic and career preparation. The school district collaborates with businesses, parents, community groups, and agencies to link educational support services into a coherent system to prepare youth to become effective, contributing citizens, workers, and if they choose, parents.

All students graduate with the attitudes, skills, and knowledge needed to enter and succeed in the workforce and/or postsecondary institutions. School-based learning activities include a variety of different options for students. Career exploration and awareness begins in the elementary schools. Counseling in a career major is available for all students. Academic preparation is essential in preparing all young people to be able to enter and succeed in postsecondary programs, including four-year colleges. Vocational programs are available for high-wage careers which are in demand. Teaching techniques emphasize workplace applications of academic subjects.

Work-based learning activities include a planned program of work experiences that are linked with school-based learning. To improve students' skills for employment and provide work-based teaching strategies, students participate in internships, mentoring, job shadowing, cooperative education, pre-apprenticeships, and study tours/field trips.

For connecting activities, school-based advocates, with each student having an adult in the school who takes a special interest in the success of the student, are used. Collaboration with the school district services and community agencies help youth overcome barriers. And efforts to involve businesses and parents with the schools provide an education based on real-world needs.

The high school offers "The High School of Medical Professions" for students with an interest in any of the medical professions or allied health fields, including medical business administration. In addition to taking a core of English, math, science, social studies, and foreign language, these students complete a required strand of courses consisting of health career exploration, health care science, honors anatomy and physiology, and health science technology education.

All freshmen take health career exploration where they explore and research health occupations. Students participate in projects and assignments on health-related issues which emphasize communication, problem-solving, and teamwork skills. Sophomores take health care science which includes a study of medical terminology, medical ethics, human anatomy as well as skill development in the areas of vital signs, practical use of medical terminology, and cardiopulmonary resuscitation. The students work with community organizations, including the local blood bank and the Health Science Center at the local university. The students sponsor a school blood drive and a community health fair. During

the fair, individuals from the neighborhood get their blood pressure taken and learn tips for good health and nutrition. In addition, students concurrently enroll in honors anatomy and physiology.

During the junior or senior year, students participate in health science technology education. This course provides the students with opportunities to place into practice their knowledge and skills. They gain actual work experience and hone their communication skills during six different clinical site rotations. Presently, there are over 75 rotation sites from which to choose. These choices range from emergency care to veterinary medicine to medical law and medical business administration. Students complete these rotations during the school day (2 periods a day) and receive honors credit. Transportation is provided to all sites. Students are expected to function as responsible interns, displaying professional attire and behavior. Each student works at different clinical sites throughout the city, one per six weeks for 2 to 2.5 hours. Grades are based on job performance and research papers on current health issues. Students' performance at the site is evaluated by the preceptor (mentor) as well as their supervising teachers. Some students have been offered job opportunities as a result of their performance on the clinical rotations.

The "High School of Medical Professions" is one of the most outstanding academic programs in the district. What started as a very small program, has evolved into a highly competitive college preparatory school. The curriculum offers a variety of honors and advanced placement courses including two period blocks for advanced placement biology and advanced placement chemistry. In the last two graduating classes, all of the graduates went on to college and received financial scholarships or assistance. The school has produced National Merit Scholars and National Negro Scholars. Other awards received by the students include science fair winners at the local, state, and national levels; Black Achievers in Science; and Future Problem-Solving participation.

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