

## **Illinois Work-Based Learning Programs: Worksite Mentor Knowledge and Training**

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### **Abstract**

*Teacher-coordinators and worksite mentors of high school work-based learning programs throughout Illinois were the subjects of this study which described worksite mentors' knowledge of teaching work skills to students participating in work-based learning programs and the nature of the training provided to these worksite mentors. There were no statistically significant differences in knowledge of teaching among worksite mentors based on attendance at training. Informal training was offered to worksite mentors most often to acquaint them with work-based learning program procedures. Worksite mentors who did not attend training stated it was not offered while those who attended formal training rated it highly.*

### **Background of the Study**

In *The School and Society* and *The Child and the Curriculum*, a 1990 compilation of his earlier books, John Dewey stated:

From the standpoint of the child, the great waste in the school comes from his inability to utilize the experiences he gets outside the school in any complete and free way within the school itself; while, on the other hand, he is unable to apply in daily life what he is learning at school. (p. 75)

Contextual teaching and learning is a concept that addresses Dewey's concern by connecting the content students are learning with the context in which the content will be used. Connecting content with context is important in bringing meaning to the learning process (Berns & Erickson, 1998). Work-based learning is a contextual teaching and learning approach in which the workplace provides a practical setting for structured work-based learning experiences. Students' coursework is utilized and prepares them for continued learning at work (Stern, Finkelstein, Stone, Latting, & Dornsife, 1994). Work-based learning includes structured programs such as youth apprenticeships and cooperative education (Naylor, 1997).

Youth apprenticeship programs integrate school- and work-based learning by placing students in an authentic work environment where they have an opportunity to

learn work and social skills needed to become effective and productive workers (Evanciew & Rojewski, 1999) in highly-skilled occupations that do not require a college degree (Illinois State Board of Education, 1995). Apprentices are placed with a knowledgeable, skilled adult who assumes primary responsibility for the student and adopts the role of mentor (Evanciew & Rojewski, 1999). Most youth apprenticeship programs are guided by state and industry standards (International Center for Leadership in Education, 2000).

Cooperative education, a structured method of combining academic education with practical work experience (Kerka, 1999), is more commonly found in high schools. The essence of cooperative career and technical education is to teach young people how to perform in the workplace. This involves learning both specific occupational skills and general employability skills.

Effective cooperative education programs require a great deal of planning and involvement from each person involved. In order for the program to be effective, all participants must be actively involved in each of their roles (Hoberman, 1994). Students must rely on the teacher-coordinator to develop classroom activities that will help them develop workplace skills, and worksite mentors must reinforce previously taught skills and introduce additional ones required at the workplace. These activities may be considerably easier for teacher-coordinators since they are educators by profession. Worksite mentors, on the other hand, may not have any training experience. The effectiveness of work-based learning programs may diminish at this point.

### **Need for the Study**

According to Hoerner and Wehrley (1995), doubt exists about whether businesspeople have the time and skill to become mentors. Meaningful work-based learning experiences require the integration of academic and occupational content. As a result, mentors need training. Without mentor training, students are likely to only learn specifics of a job instead of gaining a broad understanding of the workplace.

It is essential for the development of work-based learning programs that worksite mentors be able to identify what needs to be taught, in what order it should be taught, and how to teach it. However, according to Stone (1995), there is little development of worksite mentors. Stasz and Kaganoff (1997) also noted serious attention needs to be paid to providing appropriate training to worksite mentors and to monitoring their performance as teachers. Throughout the years, others (Franchak & Smith, 1986; Hamilton & Hamilton, 1997; Hoberman, 1994) have agreed that worksite mentor training is an essential element in an effective cooperative education program. According to the Illinois State Board of Education (1995), ideal worksite learning experiences should have worksite mentors certified after successfully completing a recognized training program.

## **Objective**

The objective of the study was to determine worksite mentors' level of knowledge and their training for teaching work skills to students enrolled in Illinois work-based learning programs. Specifically addressed were: (a) characteristics of training programs for work-based learning programs as perceived by teacher-coordinators and by worksite mentors, (b) differences in knowledge of worksite mentors who participated in a structured training program and those who did not, and (c) differences between worksite mentors' perceptions of their knowledge and teacher-coordinators' perceptions of worksite mentors' knowledge.

## **Review of Literature**

Topics providing a broad understanding of how the role of worksite mentors fits into such work-based learning programs as apprenticeships and cooperative education include: (a) contextual teaching and learning, (b) work-based learning, and (c) worksite mentor identification and training.

### **Contextual Teaching and Learning**

As Parnell (2001) stated, "few things in education are more dehumanizing and more certain to generate difficulties in the schooling process than for students to see their education as a meaningless experience" (p. 2). Contextual teaching and learning can rectify the problem students face in connecting learning in the classroom to their lives outside of school by demonstrating learning and working are not separate activities.

Berns and Erickson (2001) discussed the evolution of behaviorism to constructivism and contextual teaching and learning. Career and technical education has its foundations in behaviorism; constructivist approaches were not used to the extent of behaviorism, which is illustrated by direct instruction followed by practicing a specific skill. The career and technical education field has gradually recognized the importance of providing students with a framework to incorporate existing and new knowledge into learning situations. As a result, constructivism, which attempts to enable students to construct their own knowledge and ideas based on prior knowledge and experience and apply these ideas to new experiences and integrate their new knowledge, is being used as a pedagogical approach. Constructivism requires active participation in problem solving with an authentic learning activity that is relevant to the students. Contextual teaching and learning utilizes a constructivist model. Contextual teaching and learning builds on the theories of Dewey, Piaget, and Bruner. According to Berns and Erickson's research, contextual teaching and learning is viewed as an extension of past thinking, theories, testing, and writings.

Lynch (2000) also related that current theory and research on teaching and learning is supportive of practices identified with career and technical education, especially those related to the contextualization of learning. Contemporary work-based

learning is grounded in teaching and learning research related to cognitive sciences, psychology, and pedagogy. Work-based learning is consistent with research from these disciplines in that it blends an integrated curriculum of mental, tactile, theoretical, applied, academic, and vocational aspects. This integration provides increased retention of knowledge, deeper understanding of the subject matter, and the ability to apply knowledge and skills in unstructured environments.

According to Hughes, Bailey, and Karp (2002), developments in research on learning and pedagogy emphasized the effectiveness of “learning in context.” Cognitive psychologists argued that students learn more effectively if they are taught skills in the context in which they will use those skills. Vygotsky (1978, as cited in Evanciew & Rojewski, 1999) stressed that learning occurs most effectively when it is relevant and meaningful to the completion of activities found in a particular culture (Evanciew & Rojewski, 1999). In addition, advocates of constructivism believed a pedagogical approach in which students are more active learners and guided by their teacher to “construct” their own knowledge was needed. These approaches hold promise in helping to diminish the problem of students’ disengagement in school.

### **Work-Based Learning**

Work-based learning is a contextual teaching and learning approach in which workplace activities are integrated with classroom content (Smith, 2001, as cited in Berns & Erickson, 2001). Approaches involving work-based learning proceed from the premise that learning set in the real-world context of work not only make academic learning more accessible to many students but also increases their engagement in schooling (Wonacott, 2002). School activities help reinforce and extend the learning that occurs at the worksite while students develop attitudes, knowledge, and skills from both work and school experiences and are able to connect learning with real-life work activities (Lynch & Harnish, 1998).

**Apprenticeships.** One popular work-based learning program is the apprenticeship program. Demands and changes in modern workplaces require workers who are highly skilled and independent thinkers (Evanciew & Rojewski, 1999). School-to-apprenticeships programs involve employers, employer associations, or employers and unions that allow high school students to participate in registered apprenticeships while completing graduation requirements (Naylor, 1997). Students work with mentors who are responsible for training them on the job. Ideally, mentors increase apprentices’ ability to become independent thinkers and workers through sequenced learning opportunities and connections between work-based and school-based learning (Haensly & Parsons, 1993).

Instructional methods utilized in apprenticeship programs have proven to be successful. A study of five sites in Wisconsin (Urquiola, Stern, Horn, Dornsife, Chi, Williams, Merritt, Hughes, & Bailey, 1997) revealed two comparison groups had

statistically significant increases in absence rates while the apprenticeship programs were successful in keeping down absenteeism. In addition, apprentices had a statistically significant increase in grade point average.

Scribner and Wakelyn (1997) also studied Wisconsin's youth apprenticeship programs. Results revealed students and parents were satisfied with the content of learning in the workplace, but students believed connections between apprenticeship classes, related academic classes, and their work experiences were unclear. Students viewed their experiences as an effective way to gain skills needed to become competitive in a rapidly changing and technological workplace. The work-based experiences were rich in opportunities to practice and acquire problem-solving, critical thinking, and teamwork skills. Students were also provided opportunities to strengthen their math skills. Criticisms were expressed regarding the pedagogy and content received at the worksite.

**Cooperative Education Programs.** Another form of work-based learning is cooperative education. The William T. Grant Foundation (1988) report concluded that cooperative education "has a solid achievement record and merits far more attention than it has received" (p. 96). For these programs, students spend half of the day taking classes at school and the other half in on-the-job training that is supervised by a designated worksite mentor and coordinated by the program's teacher-coordinator (Ascher, 1994).

One five-year longitudinal study comparing students in unsupervised jobs with students enrolled in school-supervised work (predominantly cooperative education) programs found that students in supervised programs have higher-quality jobs with more contact with adults (Ascher, 1994). Cooperative education provides students with more supervision on the job, more challenge, and more meaningful work. Both students and employers in these supervised jobs more frequently report the students' work involves assuming responsibility, as well as reading, writing, problem-solving and other practices related to school learning (Stone, Hopkins, Stern, & McMillion, 1990). Cooperative education students usually express more satisfaction with school, and a more positive attitude toward work, but they do not necessarily have more occupational knowledge or "affective competence" (Stone et al., 1990). Cooperative education students also tend more often to claim that their jobs have positively affected their decisions to stay in school.

Marshall (2000) conducted a comparison study of students who participated at various levels in cooperative education as part of school-to-career programs. In general, students who actively participated in a school-to-career pathway integrated with two academic courses and a work-based learning plan performed better than their peers (students enrolled in a school-to-career pathway but did not have the work component and students in the same schools but were not enrolled in a pathway and had no work-based learning) on school engagement (attendance and tardiness) and academic

indicators (grade point average). Postsecondary results suggested that in some schools participation in school-to-careers increased the likelihood of enrolling in college.

A longitudinal study, sponsored by the National Center for Research in Vocational Education, also revealed supervision of students' work experience may increase its educational value (Stern, 1997b). One group of students worked in jobs not connected with school, some were not working at all, and the rest were enrolled in cooperative education. Cooperative education students had more positive perceptions of their jobs and of the relationship between work and school than those students in noncooperative education jobs.

### **Role and Responsibility of Teacher-Coordinators**

Teacher-coordinators work to create a cooperative education program that is effective and efficient. Responsibilities include planning, developing, implementing, operating, evaluating, and adjusting student cooperative education plans (ISBE, 1995). These responsibilities involve selecting students, preparing and delivering related instruction, locating and evaluating suitable training stations, developing training plans to guide the training of each student, and assisting worksite mentors with on-the-job instruction. Teacher-coordinators also must market the program to administrators, faculty, students, staff, parents, and the community.

### **Worksite Mentor Identification and Training**

The quality of work-based learning is heavily dependent on who provides the training (Bailey & Merritt, 1993). Work-based learning must be carefully planned and monitored by people who understand both the work setting and what is to be learned if it is going to not only expose students to the workplace and give them an opportunity to acquire specific procedural skills but also achieve broader goals (Stern, 1997a). Worksite mentors assist in the cognitive, personal, and professional development of the students. Through sequencing learning opportunities and making connections between what is learned at school and the worksite, worksite mentors increase students' ability to become independent thinkers and workers (Evanciew & Rojewski, 1999). Worksite mentors must ensure their worksites have educational value (Bailey, Hughes, & Barr, 2000).

Workplace mentoring has been identified as an important aspect of work-based learning. By establishing relationships with caring and competent adults who can provide emotional support and facilitate skill development, less-experienced youth are more likely to bridge the gap between school and work. As in other endeavors, workplace mentoring requires planning, training, monitoring, and assessment to ensure that individuals being mentored will achieve successful outcomes (Brown, 2001).

When a student engages in work-based learning in a real-world setting, it is assumed that people in the workplace pass on their knowledge (Moore, 1999). The fact

that knowledge is available does not necessarily mean a student will engage it in any significant way. The learning process depends on the extent to which the student wants, is expected, and has the opportunity to engage various forms of knowledge-use (Moore, 1999). Worksite mentors must (a) provide instruction to the student on how to perform a task; (b) demonstrate how a task is performed; (c) coach the student as the task is performed; (d) explain why the task is done in a particular way; (e) challenge the student to perform well; (f) initiate the student into the workplace culture; and (g) affirm the student's value as a person and talent as an employee (Evanciew & Rojewski, 1999).

Researchers (Hoberman, 1994; Mason, Haines, & Furtado, 1981) stressed that if cooperative education is to be an effective vehicle for school-to-work transition, one of the things it should include is a competent mentor. In order for worksite mentors to be classified as competent, they need to know their roles and how to fulfill those roles.

Wallace (as cited in Butler & York, 1971) stated few training stations start out perfect. Worksite mentors must have a commitment to education and the capability of providing effective on-the-job learning. Butler and York's (1971) study brought up a serious potential defect of cooperative education programs in the early years of these programs being established. Their study revealed employers viewed the student essentially as a part-time worker, expected effective work performance and productivity, and expected the student to bring many qualifications to the job. Students, on the other hand, expected the experience to have educational significance and to learn many things on the job that the employer expected them to already know.

At a one-day cooperative vocational education conference, conference participants noted there was still little development of worksite mentors (Stone, 1995). Among the changes recommended were to: develop a worksite mentor handbook to delineate the responsibilities of a worksite mentor, establish criteria to evaluate individual's qualifications to serve as a worksite mentor, and require worksite mentors to participate in a seminar on how to work with students in a training position.

In Scribner and Wakelyn's (1997) study of Wisconsin youth apprenticeship programs, they stated, "one of the critical elements contributing to high quality learning experiences in a youth apprenticeship program is the role of the workplace mentor" (p. 12). Results revealed 80% of student respondents rated mentoring and supervision at the worksite as "excellent." However, some students indicated their mentors were unavailable or uninvolved. One student said, "I felt that the people overseeing me at the worksite were not prepared as teachers and so they weren't as able to teach" (p. 12). Some students remarked that mentors should be trained in order to make the program educational rather than simply work experience. In a few cases, students questioned the ability of the mentors to teach skills and processes or to evaluate students accurately and appropriately. One employer acknowledged mentors require specific training to familiarize them with the curriculum, competency checklists, and other important aspects.

Teachers are also concerned with the quality of actual teaching and learning that takes place (Stasz & Stern, 1998). Evaluating the quality of work-based learning means conscious monitoring of the workplace as a learning environment. A National Center for Research in Vocational Education study of students' work-based learning experiences found students' experiences can vary widely, even within the same program because differences in training philosophy and practices led to very different kinds of teaching and learning experiences.

Hamilton and Hamilton (1997) directed a youth apprenticeship project for four years. Adults who worked with youth in the project found teaching personal and social competence more challenging than teaching technical competence. Recommendations that resulted from this study included: (a) assign clear teaching roles and responsibilities to mentors; (b) authorize teaching roles in job descriptions and performance assessments; and (c) orient, train, and support adults who teach young people.

Many high school programs in the U.S. once had training programs for employers to teach them how to be trainers on the job. "Unfortunately, the dwindling of cooperative education, combined with the presumed reluctance of employers to participate even without training, has made employer training appear a utopian dream" (Ascher, 1994, Training Employers for Coop Programs section, ¶ 1). For cooperative education or any other workplace training program to succeed, it is important to have someone at the worksite knowledgeable about workplace learning.

## **Research Method**

### **Subjects**

Using the self-report survey method of descriptive research, the subjects were teacher-coordinators and worksite mentors involved in work-based learning programs throughout Illinois. Teacher-coordinators were identified from three sources: Education-for-Employment System Directors (166), the Illinois Career Coordinators Association (51), and the Illinois State Board of Education (394).

Each of the 545 teacher-coordinators identified was asked to complete a Worksite Mentor Nomination Form to nominate one mentor who had a genuine interest in the student and his/her development in a work-based learning situation. A total of 83 worksite mentors were nominated.

### **Instrumentation and Data Gathering**

Two instruments were developed to collect data. Items were based on the contents of the National Center for Research in Vocational Education's *Develop the Training Ability of On-the-Job Instructors* (1988) module. One of the objectives of this module was to "demonstrate knowledge of the techniques and procedures for developing the training ability of on-the-job instructors" (p. 4). The National Center for Research in



Vocational Education (1998) utilized “systematic development, testing, revision, and refinement of these very significant training materials” in creating the module. Content validity was enhanced by having 16 experts in the field review the instruments. These experts were university professors who teach work-based learning courses, state department personnel in charge of work-based learning, career and technical education program administrators, and current cooperative education program teacher coordinators who were not included in the population.

The Teacher-Coordinator Survey and Worksite Mentor Survey contained four sections: Mentoring Activities, Mentoring Abilities, Mentor Training, and About Yourself. Using a five-point Likert scale, the Mentoring Activities and Mentoring Abilities sections assessed the worksite mentors’ knowledge of the techniques and procedures involved in teaching someone a new work task. The Mentor Training section requested information about the training provided and the About Yourself section collected demographic information.

Teacher-coordinators were mailed a packet (a cover letter, Teacher-Coordinator Survey, and Worksite Mentor Nomination Form). Twenty-three surveys were returned indicating the recipients were no longer teacher-coordinators; this resulted in an adjusted sample size of 522. At the end of three follow-up periods, 142 (27.20%) surveys were returned and used in the data analysis.

Of the returned teacher-coordinator surveys, 83 (58.45%) contained completed Worksite Mentor Nomination Forms. The nominated worksite mentors were mailed a packet (a cover letter and Worksite Mentor Survey), and 48 (57.83%) surveys were returned.

Bartlett, Kotrlik, & Higgins (2001) cited other authors who recommended that researchers take a random sample of 10-20% of non-respondents to use in non-respondent follow-up analyses. To determine if non-respondents differed from respondents, 121 non-respondent teacher-coordinators were randomly selected and contacted by e-mail with 7 responding that they were no longer a coordinator. They were asked selected questions equally distributed from the four sections of the Teacher-Coordinator Survey. Results from 34 completed surveys revealed these non-respondents replied similarly to those teacher-coordinators who initially returned the survey. Mean responses were essentially the same. No attempt was made to contact worksite mentor non-respondents as e-mail contact information was not available.

## **Findings**

Respondents included 142 teacher-coordinators (Table 1) and 48 worksite mentors (Table 2). Of the 142 teacher-coordinators, 88 (61.97%) were female and 53 (37.32%) were male. Their experiences as teacher-coordinators varied from 1 to 33 years with the largest percentage (55, or 38.73%) having less than 6 years of experience. The highest number (66, or 46.48%) coordinated Interrelated Cooperative Education, which

is a cooperative education program with a broader focus developed for school districts that could not support cooperative education in each occupational area--agriculture, office occupations, marketing, health, family and consumer sciences, and industrial--due to limited enrollment and/or limited community resources (ISBE, 1995). The 48 worksite mentors consisted of 26 (54.17%) females and 21 (43.75%) males. The number of years they served as worksite mentors ranged from 1 to 25 years with 25 (52.08%), having been worksite mentors for five or fewer years. The largest number reported they worked in the fields of Education and Training (11) and Hospitality and Tourism (8).

Table 1

*Teacher-Coordinator Respondents*

Characteristics	<i>n</i>	%
<b>Gender</b>		
Female	88	61.97
Male	53	37.32
No Response	1	0.7
Total	142	99.99
<b>Years of Experience as Teacher-Coordinator</b>		
1 to 5	55	38.73
6 to 10	32	22.54
11 to 15	17	11.97
16 to 20	11	7.75
26 to 30	11	7.75
21 to 25	8	5.63
More than 30	5	3.52
No Response	3	2.11
Total	142	100
<b>Type of Work-Based Learning Program Coordinated<sup>a</sup></b>		
Interrelated Cooperative Education	66	46.48
Work Experience and Career Exploration	35	24.65
Family and Consumer Sciences and Related Occupations	27	19.01
Cooperative Office Occupations	24	16.9
Industrial Cooperative Education	24	16.9
Work Study	19	13.38
Agricultural Cooperative Education	16	11.27

(table continues)

Table 1 (continued)

*Teacher-Coordinator Respondents*

Characteristics	<i>n</i>	%
Internship	16	11.27
Cooperative Marketing Occupations	15	10.56
On-the-Job Training	15	10.56
Clinical Health Occupations	9	6.34
Apprenticeship	7	4.93
Early School Leaver	7	4.93
Service Learning	7	4.93

*Note.* Total did not equal 100% due to rounding.

<sup>a</sup>More than one response could be selected.

Table 2

*Worksite Mentor Respondents*

Characteristics	<i>n</i>	%
<b>Gender</b>		
Female	26	54.17
Male	21	43.75
No Response	1	2.08
Total	48	100
<b>Years of Experience as Worksite Mentor</b>		
0 to 5	25	52.08
6 to 10	14	29.17
16 to 20	3	6.25
No Response	3	6.25
11 to 15	2	4.17
21 to 25	1	2.08
Total	48	100
<b>Type of Business at Which Mentor Works</b>		
Education and Training	11	22.92
Hospitality and Tourism	8	16.67
Health Services	6	12.5
Manufacturing	5	10.42
Retail/Wholesale Sales	5	10.42
Government and Public Administration	4	8.33
Finance	3	6.25

(table continues)

Table 2 (continued)

*Worksite Mentor Respondents*

Characteristics	<i>n</i>	%
Agriculture and Natural Resources	2	4.17
Architecture and Construction	2	4.17
Business and Administration	1	2.08
Human Services	1	2.08
Total	48	100.01

*Note.* Total did not equal 100% due to rounding.

### Characteristics of Training Programs

According to teacher-coordinators, formal training—structured workshops—was offered by only 12 teacher-coordinators and more teacher-coordinators said formal training was optional (9, or 56.25%) rather than required (7, or 43.75%) of worksite mentors (Table 3). Formal training lasted from 2 to 40 hours with most (8, or 50.00%) lasting under 6 hours. Formal training was offered in 1 to 8 sessions and more often (8 of 14) was conducted by someone other than teacher-coordinators. Four of twelve teacher-coordinators revealed this was the first time formal training was provided. Teacher-coordinators indicated informal training—one-on-one discussions—was offered most often (97, or 68.31%), and the most popular topics covered during informal training were the role of the mentor (94, or 96.90%), the training agreement (91, or 93.81%), and expectations of the student (87, or 89.69%).

Only half (24, or 50.00%) of the worksite mentors attended some type of training (Table 4). Of those who attended, more attended informal (18, or 37.50%) than formal training (4, or 8.33%). More worksite mentors (7, or 14.58%) indicated they were not required to attend formal training and training was offered by someone other than the teacher-coordinator (4, or 8.33%). Topics most frequently covered during informal training were: expectations of students (19, or 39.58%), the training agreement (17, or 35.42%), and students' abilities (17, or 35.42%). A majority (30, or 62.50%) of worksite mentors stated individualized training was available from teacher-coordinators when problems arose.

Worksite mentors who did not attend training (22, or 45.83%) cited that training was not offered or it was not needed (1, or 2.08%) as the reason for not attending. Worksite mentors revealed formal training lasted from 2 to 24 hours and occurred anywhere from at the worksite mentors' place of business to over 30 miles away from their place of business. Worksite mentors rated formal training as either "very beneficial" (4, or 8.33%) or "somewhat beneficial" (2, or 4.17%); none selected "not beneficial."

Table 3

*Worksite Mentor Training Characteristics as Perceived by Teacher-Coordinaors*

Characteristics	<i>n</i>	%
<b>Type of Training Offered</b>		
Informal	90	63.38
No Training	34	23.94
Both Formal & Informal	7	4.93
No Response	6	4.23
Formal	5	3.52
Total	142	100
<b>Formal Training Requirement</b>		
Optional	9	56.25
Required	7	43.75
Total	16	100
<b>Number of Formal Training Sessions</b>		
No Response	10	62.5
3 sessions	2	12.5
1 session	1	6.25
2 sessions	1	6.25
4 sessions	1	6.25
8 sessions	1	6.25
Total	16	100
<b>Length of Total Formal Training</b>		
No Response	5	31.25
2 hours	4	25
3 hours	2	12.5
5 hours	2	12.5
8 hours	2	12.5
40 hours	1	6.25
Total	16	100
<b>Topics Covered During Informal Training<sup>a</sup></b>		
Role of Mentor	94	96.9
Training Agreement	91	93.81
Expectations of Student	87	89.69
Student's Abilities	72	74.23
How to Teach Work Tasks	23	23.71
Materials Needed for Instruction	16	16.49

<sup>a</sup>More than one response could be selected.

Table 4

*Worksite Mentor Training Characteristics as Perceived by Worksite Mentors*

Characteristics	<i>n</i>	%
<b>Training Attended</b>		
No Training	20	41.67
Informal	18	37.5
Formal	4	8.33
No Response	4	8.33
Both Formal & Informal	2	4.17
Total	48	100
<b>Reasons for Not Attending Training</b>		
No Response	25	52.08
Not Offered	22	45.83
Did Not Need It	1	2.08
Too Long	0	0
Not Interested	0	0
Too Far Away	0	0
Schedule Conflict	0	0
Already Been to Mentor Training	0	0
Total	48	99.99
<b>Required Formal Training</b>		
No Response	37	77.08
No	7	14.58
Yes	4	8.33
Total	48	99.99
<b>Training Provider</b>		
No Response	43	89.58
Someone Other than Teacher-Coordinator	4	8.33
Teacher-Coordinator	1	2.08
Total	48	99.99
<b>Quality of Formal Training</b>		
No Response	42	87.5
Very Beneficial	4	8.33
Somewhat Beneficial	2	4.17
Not Beneficial	0	0
Total	48	100

(table continues)

Table 4 (continued)

*Worksite Mentor Training Characteristics as Perceived by Worksite Mentors*

Characteristics	<i>n</i>	%
<b>Length of Formal Training</b>		
No Response	43	89.58
24 Hours	2	4.17
2 Hours	1	2.08
3 Hours	1	2.08
8 Hours	1	2.08
Total	48	99.99
<b>Location of Formal Training</b>		
No Response	42	87.5
0 to 10 Miles	2	4.17
Over 30 Miles	2	4.17
At My Place of Business	1	2.08
11 to 20 Miles	1	2.08
21 to 30 Miles	0	0
Total	48	100
<b>Individualized Training Available</b>		
Yes	30	62.5
No	13	27.08
No Response	5	10.42
Total	48	100
<b>Informal Training Topics Covered<sup>a</sup></b>		
Expectations of Student	19	39.58
Training Agreement	17	35.42
Student's Abilities	17	35.42
Role of Mentor	15	31.25
Materials Needed for Instruction	6	12.5
How to Teach Work Tasks	4	8.33

*Note.* Total did not equal 100% due to rounding.

<sup>a</sup>More than one response could be selected.

**Differences in Knowledge Based on Training Program Participation**

A *t*-test was performed ( $\alpha=.05$ ) to analyze differences between the group means of mentors' knowledge for teaching work skills by whether worksite mentors attended training (Table 5). Respondents were asked to rate the level of importance a worksite mentor should place on a variety of activities when teaching a new work task. The mean

(*M*) indicates that the respondents felt the importance of the activities identified were 4.10 on a 5-point scale (Extremely Important to Extremely Unimportant) for those who attended training and 4.08 for those who did not. Results of the *t*-test should be interpreted with caution due to lack of a random, representative sample of the population. The effect size was small (.02). Even though the worksite mentors who attended formal training rated it beneficial, no statistically significant differences were found in worksite mentor knowledge of teaching between worksite mentors who attended training and those who did not ( $p=0.90$ ).

Table 5

*Comparison of Mean Scores of Worksite Mentors' Knowledge of Teaching by Level of Training*

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Attended	24	4.1	0.5	0.1	42	0.9	.02
Did Not Attend	20	4.0	0.4				

### **Worksite Mentors' and Teacher-Coordinators' Perceptions of Worksite Mentors' Knowledge**

To determine if differences existed between teacher-coordinators' perceptions and worksite mentors' perceptions of worksite mentors' knowledge of teaching (Table 6), a *t*-test was performed ( $\alpha=.05$ ). Teacher-coordinators and worksite mentors were asked to rate the level of importance a worksite mentor should place on a variety of activities when teaching a new work task. The mean (*M*) indicates that the teacher-coordinators felt the importance of the activities identified were 4.07 on a 5-point scale (Extremely Important to Extremely Unimportant) while the mean for Worksite Mentors was 4.06. Results of the *t*-test should be interpreted with caution due to lack of a random, representative sample of the population. The effect size was small (.01). No statistically significant differences were found between the means of the two groups ( $p=0.90$ ).

Table 6

*Comparison of Mean Scores of Teacher-Coordinators' and Worksite Mentors' Perceptions of Worksite Mentors' Knowledge of Teaching*

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Teacher-Coordinator	142	4.07	0.35	0.13	188	0.90	.01
Worksite Mentor	48	4.06	0.49				



## **Conclusions and Discussion**

Several limitations to this study are warranted. The return rate (27.20%) for teacher-coordinators needs to be considered. This return rate may not have been as high as it could have due to the fact teacher-coordinators may have felt threatened by the surveys. For example, only 83 of the 142 teacher-coordinators nominated a worksite mentor to complete the Worksite Mentor Survey. Teacher-coordinators may have questioned whether the instruments were designed to determine if they were adequately performing their job. Further, follow-up analysis of worksite mentor non-respondents was not possible since contact information was not available. As a result of these limitations, caution must be used in generalizing any conclusions.

Based on the findings, informal training—one-on-one discussions between the teacher-coordinator and worksite mentor—was the most common form of worksite mentor training offered. This informal training focused on work-based learning programs' procedures rather than how to teach students work skills. In the Wisconsin youth apprenticeship programs study, Scribner and Wakelyn (1997) stated mentors should be trained to make the program educational rather than simply work experience and that more training is needed for awareness of what the role entails on a daily basis. This is consistent with Stone's (1995) observation that there was little development of worksite mentors. This result conflicted with some older literature that cited many high school programs once had training programs, but no longer offer training because worksite mentors are reluctant to participate (Ascher, 1994).

The current study revealed no differences in knowledge of teaching work skills among worksite mentors who attended formal training and those who did not. The literature review did not yield other studies examining worksite mentor knowledge for teaching work skills so it was not possible to compare these results to existing studies.

Worksite mentors and teacher coordinators generally have similar perceptions of worksite mentors' knowledge of activities needed to develop students' work skills. These results could be contributed to the fact that teacher-coordinators nominated the worksite mentors and may have nominated worksite mentors with similar values. The literature review revealed the quality of work-based learning is heavily dependent on who happens to provide training (Bailey & Merritt, 1993), and work-based learning must be carefully planned and monitored by people who understand the work setting and what is to be learned (Stern, 1997a). In order for worksite mentors to be competent in these tasks, they must know what their roles are and how to fulfill them.

## **Recommendations**

The premise behind work-based learning is students should be provided with learning at the worksite that is equivalent to or better than learning that could be provided in a classroom setting. With this in mind, the following recommendations are made:

Further research should address why many worksite mentors are not receiving and/or not participating in formal or informal training. A qualitative research approach would be useful in probing for specific type of worksite mentor training needs. Ideally, worksite mentors should be identified as a specific group without connection to a teacher-coordinator to gain more objective research data regarding what is needed to develop effective mentors. Teacher-coordinators are required to have formal education in teaching methodology, but worksite mentors are not. Such research could help in understanding worksite mentors' needs as instructors and determining if formal training is needed to provide them with the necessary skills to teach effectively. Research is also needed in assessing students' perceptions of worksite mentors' teaching abilities. If the student cannot learn at the worksite because the mentor is not able to teach work tasks, does work-based learning live up to the premise that the learning should be equivalent to or better than learning that could be provided in a classroom setting?

Required work-based learning/cooperative education program courses provided to future teacher coordinators at universities should include instruction on the importance of worksite mentor training. This instruction should stress how to train worksite mentors in methodology and how to evaluate instruction provided by worksite mentors. Based on the aforementioned premise regarding work-based learning, teacher coordinators must be made aware of the importance of developing worksite mentors in order for them to understand the techniques required to teach students new work skills. A standard for work-based learning programs in Georgia states that work-based learning program personnel participate in state-sponsored professional development programs to update professional and occupational knowledge and skills relative to the work-based learning program (Smith, 2000).

Limited research exists about how worksite mentors gain the skills needed to instruct students. Worksite mentors have many responsibilities in their role with teaching being one of the most important. Instructional materials should be developed to provide basic teaching methodology to worksite mentors. This might be accomplished via preparation of a user-friendly, instructional CD-ROM or video. The instructional materials could be distributed to worksite mentors at the time they agree to serve as a mentor for a work-based learning program.

### References

- Ascher, C. (1994). Cooperative education as a strategy for school-to-work transition. *CenterFocus*, 3. Retrieved December 31, 2002, from National Center for Research in Vocational Education Web site: <http://ncrve.berkeley.edu/CenterFocus/cf3.html>
- Bailey, T., Hughes, K., & Barr, T. (2000). Achieving scale and quality in school-to-work internships: Findings from two employer surveys. *Educational Evaluation and Policy Analysis*, 22(1), 41-64.

- Bailey, T., & Merritt, D. (1993). Youth apprenticeship: Lessons from the U.S. experience. *CenterFocus, 1*. Retrieved December 31, 2002, from National Center for Research in Vocational Education Web site: <http://ncrve.berkeley.edu/CenterFocus/cf1.html>
- Bartlett, J. E., II, Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal, 19*(1), 49.
- Berns, R. B., & Erickson, P. M. (1998). *Contextual teaching and learning*. Retrieved March 30, 2003, from <http://www.bgsu.edu/ctl>
- Berns, R. B., & Erickson, P. M. (2001). *Contextual teaching and learning: Preparing students for the new economy*. Columbus, Ohio: Career and Technical Education National Dissemination Center.
- Brown, B. L. (2001). Mentoring and work-based learning. *Trends and Issues Alert, 29*. ERIC Clearinghouse on Adult, Career, and Vocational Education.
- Butler, R. L., & York, E. G. (1971). *What teacher-coordinators should know about cooperative vocational education*. Columbus, OH: Center for Vocational and Technical Education.
- Dewey, J. (1990). *The school and society and the child and the curriculum*. Chicago: University of Chicago Press.
- Evanciew, C. E., & Rojewski, J. W. (1999). Skill and knowledge acquisition in the workplace: A case study of mentor-apprentice relationships in youth apprenticeship programs. *Journal of Industrial Teacher Education, 36*(2), 24-54.
- Franchak, S. J., & Smith, O. H. M. (1986). *Preparing for high technology: Successful co-op strategies*. Columbus, OH: National Center for Research in Vocational Education.
- Haensly, P. A., & Parsons, J. L. (1993). Creative, intellectual, and psychosocial development through mentorship: Relationships and stages. *Youth & Society, 25*, 202-221.
- Hamilton, M. A., & Hamilton, S. F. (1997). When is work a learning experience? *Phi Delta Kappan, 78*(9), 682-690.
- Hoberman, S. (1994). Time-honored or timeworn? Cooperative education in the 1990s. *Vocational Education Journal, 69*(3), 28-31.
- Hoerner, J. L., & Wehrley, J. B. (1995). *Work-based learning: The key to school-to-work transition*. New York: Glencoe/McGraw-Hill.
- Hughes, K. L., Bailey, T. R., Karp, M. M. (2002). School-to-work: Making a difference in education. *Phi Delta Kappan, 84*(4), 272-279.

- Illinois State Board of Education. (1995). *Handbook for cooperative education and registered apprenticeship*. Springfield, IL: Illinois State Board of Education.
- International Center for Leadership in Education. (2000). *Instructional strategies: How to teach for rigor and relevance*. Rexford, NY: Leadership Media.
- Kerka, S. (1999). *New directions for cooperative education*. Columbus, OH: ERIC Clearinghouse on Adult Career and Vocational Education. Retrieved October 1, 2001, from [http://www.ed.gov/databases/ERIC\\_Digests/ed434245.html](http://www.ed.gov/databases/ERIC_Digests/ed434245.html)
- Lynch, R. L. (2000). High school career and technical education for the first decade of the 21<sup>st</sup> Century. *The Journal of Vocational Education Research*, 25(2) (63-72).
- Lynch, R. L., & Harnish, D. (1998). Preparing pre-service teacher education students to use work-based strategies to improve instruction. In *Contextual teaching and learning: Preparing teachers to enhance student success in the workplace and beyond* (p. 127-158). Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education.
- Marshall, K. G. (2000). A longitudinal study of school-to-career programs in the Boston Public Schools (Massachusetts). *Dissertation Abstracts International. Volume: 61-11*, Section: A, page: 4356.
- Mason, R., Haines, P., & Furtado, L. T. (1981). *Cooperative occupational education and work experience in the curriculum*. Danville, IL: Interstate Printers & Publishers.
- Moore, D. (1999). Toward a theory of work-based learning. Institute on Education and the Economy. *IEE Brief*, 23. Retrieved April 5, 2003, from <http://www.tc.columbia.edu/~ice/BRIEFS/Brief23.htm>
- National Center for Research in Vocational Education. (1988). *Develop the training ability of on-the-job instructors* (2<sup>nd</sup> ed.). Athens, GA: American Association for Vocational Instructional Materials.
- Naylor, M. (1997). *Work-based learning*. Columbus, OH: ERIC Clearinghouse on Adult Career and Vocational Education. Retrieved October 1, 2001 from <http://ericacve.org/docgen.asp?tbl=digests&ID=40>
- Parnell, D. (2001). *Contextual teaching works! Helping students reach higher levels of achievement*. Waco, TX: CORD.
- Scribner, J. P., & Wakelyn, D. (1997). *Youth apprenticeship experiences in Wisconsin: A stakeholder-based evaluation*. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education. (ERIC Document Reproduction Service No. ED422505)
- Smith, C. L. (2000). *Work-based learning program standards and indicators*. Paper presented at Association for Career and Technical Education Conference, San Diego.

- Stasz, C., & Kaganoff, T. (1997). *Learning how to learn at work: Lessons from three high school programs*. Berkeley, CA: National Center for Research in Vocational Education.
- Stasz, C., & Stern, D. (1998). *CenterPoint, 1*. Retrieved December 31, 2002, from National Center for Research in Vocational Education Web site: <http://ncrve.berkeley.edu/CenterPoint/CP1/CP1.html>
- Stern, D. (1997a). *The continuing promise of work-based learning*. Retrieved December 31, 2002, from National Center for Research in Vocational Education Web site: <http://ncrve.berkeley.edu/CenterFocus/CF18.html>
- Stern, D. (1997b). Learning and earning: The value of working for urban students. *ERIC/CUE Digest*, 128. Retrieved June 23, 2001, from [http://www.ed.gov/databases/ERIC\\_Digests/ed413405.html](http://www.ed.gov/databases/ERIC_Digests/ed413405.html)
- Stern, D., Finkelstein, N., Stone, J. R., III, Latting, J., & Dornsife, C. (1994). *Research on School-to-Work Programs in the United States*. Berkeley, CA: National Center for Research in Vocational Education.
- Stone, J. R., III. (1995). Cooperative vocational education in the urban school. *Education & Urban Society*, 27, 328-353.
- Stone, J. R., III, Hopkins, C., Stern, D., & McMillion, M. (1990, Spring). Adolescents' perceptions of their work: School supervised and non-supervised. *Journal of Vocational Education Research*, 15(2), 31-53.
- Urquiola, M., Stern, D., Horn, I., Dornsife, C., Chi, B., Williams, L., Merritt, D., Hughes, K., & Bailey, T. (1997). *School to work, college and career: A review of policy, practice, and results 1993-1997*. Berkeley, CA: National Center for Research in Vocational Education.
- The William T. Grant Foundation Commission on Work, Family and Citizenship. (1988). *The forgotten half: Pathways to success for America's youth and young families*. Washington, DC: Author.
- Wonacott, M. E. (2002). The impact of work-based learning on students. *ERIC Digest*, 242 (EDO-CE-02-242) ERIC Clearinghouse on Adult, Career, and Vocational Education.

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