DOCUMENT RESUME

ED 331 228 EC 300 209

AUTHOR	Rusch, Frank R., Comp.
TITLE	Research in Secondary Special Education and Transitional Employment.
INSTITUTION	Illinois Univ., Champaign. Secondary Transition Intervention Effectiveness Inst.
SPONS AGENCY	Illinois Planning Council on Developmental Disabilities, Springfield.; Illinois State Dept. of Mental Health and Developmental Disabilities, Springfield.; Illinois State Dept. of Rehabilitation Services, Springfield.; Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE	90
CONTRACT	300-85-0160; STILMIDOR-GPC-MHD983
NOTE	182p.; For individual papers, see EC 300 210-217.
PUB TYPE	Collected Works - General (020) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Adolescents; Adults; Definitions; *Disabilities; *Education Work Relationship; Interpersonal Communication; Interpersonal Competence; Job Placement; Labor Turnover; Minority Groups; Parent Participation; Peer Relationship; Secondary Education; Special Education; *Supported Employment; Training Methods; Transitional Programs
IDENTIFIERS	Impairment Severity

ABSTRACT

This compilation of eight research papers covers various aspects of secondary-level special education and transitional employment involving individuals with mild to profound disabilities. Titles and authors of the papers are: "Parent Involvement in Transition Programs" (Jeff McNair and Frank R. Rusch); "Using a Cognitive-Process Approach To Teach Social Skills" (Lana Collet-Klingenberg and Janis Chadsey-Rusch); "An Analysis of Minority Status Supported Employees in Relation to Placement Approach and Selected Outcomes" (Philip G. Wilson and others); "Analysis of Co-worker Involvement in Relation to Level of Disability versus Placement Approach among Supported Employees" (Frank R. Rusch and others); "Toward a Definition of Social Skills: Implications for Adults with Mental Retardation in Employment Settings (Janis Chadsey-Rusch); "Social Interactions of Secondary-Aged Students with Severe Handicaps: Implications for Facilitating the Transition from School to Work" (Janis Chadsey-Rusch); "An Analysis of the Reasons for Job Separations in Relation to Disability, Placement, Job Type, and Length of Employment" (Thomas R. Lagomarcino and Frank R. Rusch); and "Co-worker Involvement Scoring Manual and Instrument" (Frank R. Rusch and others). (JDD)

Research in Secondary Special Education and Transitional Employment

Frank R. Rusch

TRANSITION INSTITUTE AT ILLINOIS

The following principles guide our research related to the education and employment of youth and adults with specialized education, training, employment, and adjustment needs.

- Individuals have a basic right to be educated and to work in the environment that least restricts their right to learn and interact with other students and persons who are not handicapped.
- Individuals with varied abilities, social backgrounds, aptitudes, and learning styles must have equal access and opportunity to engage in education and work, and life-long learning.
- Education experiences must be planned, delivered, and evaluated based upon the unique abilities, social backgrounds, and learning styles of the individual.
- Agencies, organizations, and individuals from a broad array of disciplines and professional fields must effectively and systematically coordinate their efforts to meet individual education and employment needs.
- Individuals grow and mature throughout their lives requiring varying levels and types of educational and employment support.
- The capability of an individual to obtain and hold meaningful and productive employment is important to the individual's quality of life.
- Parents, advocates, and friends form a vitally important social network that is an instrumental aspect of education, transition to employment, and continuing employment.

The Secondary Transition Intervention Effectiveness Institute is funded through the Office of Special Education Programs, Office of Special Education and Rehabilitative Services, U.S. Department of Education (contract number 300-85-0160).

Project Officer: William Halloran

Additional support for this volume was provided by the Illinois Department of Rehabilitation Services, Illinois Planning Council on Developmental Disabilities, and Illinois Department of Mental Health and Developmental Disabilities (grant number STILMIDOR-GPC-MHD983).

For more information on the Transition Institute at Illinois, please contact:

Dr. Frank R. Rusch, *Director*
College of Education
University of Illinois
110 Education Building
1310 South Sixth Street
Champaign, Illinois 61820
(217) 333-2325

Merle L. Levy, Publications Editor

Research in Secondary Special Education and Transitional Employment

Frank R. Rusch

The Secondary Transition Intervention Effectiveness Institute

University of Illinois at Urbana-Champaign

Contents

	Page
Parent Involvement in Transition Programs Jeff McNair and Frank R. Rusch	1
Using a Cognitive Process Approach to Teach Social Skills Lana Collet-Klingenberg and Janis Chadsey-Rusch	21
An Analysis of Minority Status Supported Employees in Relation to Placement Approach and Selected Outcomes Philip G. Wilson, Mark F. O'Reilly, Frank R. Rusch, and Jho-Ju Tu	47
Analysis of Co-worker Involvement in Relation to Level of Disability versus Placement Approach Among Supported Employees Frank R. Rusch, John E. Johnson, and Carolyn Hughes	61
Toward a Definition of Social Skills: Implications for Adults with Mental Retardation in Employment Settings Janis Chadsey-Rusch	83
Social Interactions of Secondary-Aged Students with Severe Handicaps: Implications for Facilitating the Transition from School to Work Janis Chadsey-Rusch	107
An Analysis of the Reasons for Job Separations in Relation to Disability, Placement, Job Type, and Length of Employment Thomas R. Lagomarcino and Frank R. Rusch	135
Co-worker Involvement Scoring Manual and Instrument Frank R. Rusch, Carolyn Hughes, Jeff McNair, and Philip G. Wilson	149

Parent Involvement in Transition Programs

Jeff McNair and Frank R. Rusch

Professionals in various education and rehabilitation disciplines often comment on the importance of parents to the success of education programs and indicate that in the absence of special funding or special projects, the single most important factor in successful transition is the parent. However, there is little information about how parents have been and can be involved, or what parents perceive their role(s) to be.

Much work has been done regarding parent perceptions of educational programs. McDonnel (1987) found that parents were satisfied with the quality of special education instruction and the overall program offered by local schools. Myers and Blacher (1987) found parents were satisfied with their child's special education teacher, school personnel, and the school program in general. Epps and Myers (1989) found that parents were satisfied with school teaching across the four educational domains (domestic, community, vocational, and leisure). Yet they report that 45% of parents anticipate "employment" (the authors use this term in its broadest sense) of their transition-aged sons or daughters with severe handicaps in an adult day program, 15% in sheltered employment, and only 3% in part-time employment. No mention was made, however, of whether or how parents were involved in a transition program, or the basis of their perceptions.

Schwartz (1970) describes interactive strategies used by mothers involved in the medical care system. She found that the parents she interviewed tended to adopt one of three roles: they are active questioners or passive acceptors, or they withdraw from the system. It seems that in the transition process, parents can assume three similar roles: facilitator, nonparticipant, or difficult parent. As facilitator, a parent contributes to the transition team as an integral team member who is willing to make some kind of commitment (e.g., receive training, attend meetings, assist in finding vocational placements or living arrangements) in order to maximize his or her involvement (Wehman, Kregel, & Barcus, 1985). As

nonparticipant, the parent gives those working with his or her child a free hand in transition plan development and implementation. For example, Hill, Seyfarth, Orelove, Wehman, and Banks (1985) found that parents indicated satisfaction with the current program placements of their children regardless of how normalized the placement was or the quality of the work life it offered. This is similar to the findings of Epps and Myers (1989), who reported that parents are satisfied with the education or transition program independent of the expected employment or independent living outcome. These parents do little more than sign the transition plan. This is by no means a value judgment of this group, because circumstances sometimes prohibit involvement.

The difficult parent opts for outcomes other than those recommended by the transition team, perhaps because of a past disagreement with one of the members of the transition team, the results of the intense stress at the time of transition (Cole, 1985), or philosophical differences. The work of Hill, Seyfarth, Orelove, Wehman, and Banks (1985) supported the third of these potential problems when they found that parents may not agree with the transition team about the importance of work itself in the adult life of a person with handicaps. At the same time, however, it is important to point out that one person's difficult parent is another person's advocate. Without professionals to take the lead, the parent may be the only defense against inappropriate goals and outcomes.

Unfortunately, many transition programs may have avoidance of the difficult parent as their only goal. This is not to imply that they embrace either of the other two types of parents; they merely avoid the third type. Obviously programs based on this strategy of interaction with parents cannot be expected to be successful in acquiring optimal levels of involvement.

Assuming that parent involvement is important to desired transition outcomes (integrated employment, independent living, and just options in general), researchers need to address more specifically how to facilitate parent involvement. A good starting point would be to assess the current profile of parent involvement in transition programs,

including the percentage of clients and their parents being served, the type of involvement and roles that parents are assuming in the transition process (Schutz, 1986), and how this profile matches up with the involvement desired by parents. Additionally, researchers should determine how involvement has affected parent projections for the future (Seyfarth, Hill, McMillan, & Wehman, 1987). It was the goal of this study to look at these issues.

In this study, parents were asked what their involvement had been in the transition process, the kind of involvement they would desire, and responsibilities they would be willing to assume in order to be involved. It is hoped that this information will provide (a) an indication of how parent desires for involvement are being addressed, and (b) an indication of parents' satisfaction with transition involvement.

Methodology

Survey Sample

The survey sample consisted of 200 families across the United States who had a son or daughter with handicaps in the age range from 14 to 25. The sample was identified by the Ohio Coalition of the National Parent CHAIN (Coalitions for Handicapped Awareness and Information Network). The Ohio Coalition contacted the other eight regional coalitions (California, Colorado, Florida, Illinois, Pennsylvania, New York, Texas, and Washington, DC) and asked each office to identify approximately 20 families within their region who met the criterion for inclusion in the sample. These names were then forwarded to the Ohio Coalition.

Survey materials were assembled and coded by the authors and sent to CHAIN where an introductory letter was included, names were coded, and the survey mailed. During this time, the authors remained in close contact with the CHAIN staff. Two weeks after the first mailing, a follow-up letter was sent to nonrespondents encouraging them to respond. Completed packets were then returned to the authors.

Questionnaire

Basic demographic information and information about parent involvement in transition programs was collected (see Table 1). In preparing the questionnaire, a question regarding program involvement was included as a means of comparing the experiences of respondents in transition programs. Respondents could reply to the question, "Which of the following describes your son's (daughter's) involvement in a program to help him (her) to make the transition from school to independent living or work?" by checking one of the following: (a) will be involved in a program, (b) is currently involved in a program, (c) has completed a program, or (d) there is no program that I know about. These four groups provided the basis for several comparisons.

Other questions addressed whether parents had a plan in mind for their child once they left school, the kind of information parents felt they needed to make the best decisions for their offspring's future, whether they had been contacted by the school to plan for transition, and their knowledge of adult services. A large portion of the survey concerned the involvement that parents had had in programs and the type of involvement they would like or be willing to have in programs.

In order to compare expected and desired outcomes more specifically, parents were provided with 11 statements relating to their son's (daughter's) post-school life and asked to respond to two questions about each statement. First, they were asked "What do you imagine your son/daughter will be doing once his/her education is completed?" and second, "What would you like to see your son/daughter doing once his/her education is completed?" These and other questions provided a framework for an analysis of parent involvement in transition programs.

Table 1

Selected Parent Survey Items Related to Parent Involvement in Transition Programs
(Questions 1-24 relate to demographics and therefore are not included in this table.)

---

25. Have you been contacted by your son's/daughter's school to plan for his/her transition to independent living or work once they have finished with school?

    _____ Yes _____ No

26. Do you have a plan in mind for what your son/daughter will be doing once he/she has finished with school?

    _____ Yes _____ No

27. Do you know what adult services are available in the community for your son/daughter once he/she is finished with school?

    _____ Yes _____ No

28. Do you feel that you have been an important part of the team planning for the transition of your son/daughter from school to independent living or work?

    _____ Yes _____ No _____ As far as I know there is no team

29. What do you imagine your son/daughter will be doing once he/she is finished with school? (Check all that apply.)

    _____ Living at home
    _____ Living in a group home
    _____ Living in his/her own apartment
    _____ Working a sheltered workshop
    _____ Earning less than minimum wage
    _____ Earning more than minimum wage
    _____ Living in the community
    _____ Living in a state institution
    _____ Holding a job in the community
    _____ Not working at all
    _____ Earning minimum wage

30. Please check each of the following that would help you plan for your son's/daughter's life once he/she has finished with school. (Check all that apply.)

    _____ More information about your son's/daughter's school
    _____ More information about your son's/daughter's skills
    _____ A better understanding of your son's/daughter's options for work in the community
    _____ A better understanding of your son's/daughter's options for independent living in the community
    _____ Increased financial support for your son/daughter once he/she has finished with school
    _____ Increased emotional support and encouragement from your family
    _____ Involvement in a parent support group
    _____ More information about adult service agencies
    _____ Increased professional support (from teachers, doctors, clergy, etc.)
    _____ Other (please specify)_____
    _____ I do not think I need any help

31. What would you like to see your son/daughter doing once he/she is finished with school? (Check all that apply.)

    _____ Living at home
    _____ Living in a group home
    _____ Living in his/her own apartment
    _____ Working in a sheltered workshop
    _____ Earning less than minimum wage
    _____ Earning more than minimum wage
    _____ Living in the community
    _____ Living in a state institution
    _____ Holding a job in the community
    _____ Not working at all
    _____ Earning minimum wage

Table 1 (Continued)

32. Which of the following describes your son's/daughter's involvement in a program to help him/her to make the transition from school to independent living or work?
    - _____ Will be involved in a program (go on to question 35)
    - _____ Currently involved in a program (go on to question 34)
    - _____ Has already completed a program (go on to question 33)
    - _____ There is no program that I know about (go on to question 35)

33. If your son/daughter has already completed a transition program, what is he/she doing now? (Check all that apply.)
    - _____ Living at home
    - _____ Living in a group home
    - _____ Living in his/her own apartment
    - _____ Working in a sheltered workshop
    - _____ Earning less than minimum wage
    - _____ Earning more than minimum wage
    - _____ Living in the community
    - _____ Living in a state institution
    - _____ Holding a job in the community
    - _____ Not working at all
    - _____ Earning minimum wage

34. What kind(s) of involvement have you had in programs assisting your son/daughter with the transition from school to work? (Check all that apply.)
    - _____ A member of the transition team
    - _____ An equal partner in decision making
    - _____ Involved in finding potential job placements
    - _____ Involved in finding potential community living arrangements
    - _____ The person who makes all the final decisions
    - _____ A resource person who is called upon only if needed
    - _____ No involvement
    - _____ Other (please specify)_____

35. What kind(s) of involvement would you like to have in programs assisting your son/daughter with transition from school to work? (Check all that apply.)
    - _____ A member of the transition team
    - _____ An equal partner in decision making
    - _____ Involved in finding potential job placements
    - _____ Involved in finding potential community living arrangements
    - _____ The person who makes all the final decisions
    - _____ A resource person who is called upon only if needed
    - _____ No involvement
    - _____ Other (please specify)_____

36. In order to be most involved in the transition process, I would be willing to
    - _____ Attend weekly meetings
    - _____ Attend monthly meetings
    - _____ Take some training to learn more about transition
    - _____ Help to solve logistical problems (like transportation)
    - _____ Assist in the training of other parents
    - _____ Participate in training groups with other parents
    - _____ Participate in support groups with other parents
    - _____ I would rather leave it up to professionals (teachers, rehabilitation counselors, etc.)
    - _____ Other (please specify)_____

37. Does your son/daughter have a job right now?

    _____ Yes _____ No

Data Analysis

Frequencies were generated for each of the survey items. Respondents were then divided into the four groups mentioned earlier based upon their transition program involvement experience. Significant differences among the groups were determined with Student's t-tests and analyses of variance.

Data were considered missing if a question mark was placed on a response blank rather than a check, if two marks were made for a question requiring only one, or if the respondents created and checked her own category.

Results and Discussion

Of the 200 surveys sent, 108 were returned. Of these, 85 were completed correctly and met the criteria for inclusion (offspring between the ages of 14 and 25). Surveys were received from 22 states. Most respondents (51%) lived in suburban areas, 19% were urban, and 27% were rural. Virtually all of the respondents were white (99%), and all surveys were completed by the mother of the child with handicaps. Mothers' ages ranged from 34 to 62 with a mean of 47, and fathers' ages ranged from 36 to 72 with a mean of 49. Twenty-five percent indicated that high school was the highest educational level achieved; 62% indicated college experience. Sixty-two percent of the parents had annual incomes of more than $30,000, and 24% had incomes of $20,000 to $30,000. Eighty-nine percent of families were two-parent families, 87% were married, 1% single, and 9% divorced.

In 62% of the cases, there were either three or four persons living in the household, with 72% having three or fewer children. In 59% of the families only one person worked full time; in 31%, two persons worked full time; and in 33%, one person worked part time. (In 52%, no one worked part time.) Ninety-four percent indicated a religious affiliation, and 61% considered themselves regular church attenders (6% often; 27% seldom; 6% never). Eighty-eight percent had only one child with handicaps and that child was most often the firstborn (45%) or secondborn (21%). Twelve percent had more than one child with handi-

caps. Finally, 56% of the offspring were male and 44% were female. Ages of the offspring with handicaps ranged from 14 to 25 with a mean of 18.6.

Offspring Characteristics

Parents were given a list of handicaps and encouraged to check all handicapping conditions that applied to their child. Therefore, parents may have checked learning disability and sensory impairment, for example, in reference to a single child. The most frequently checked responses were learning disability, physical handicaps, and moderate mental retardation.

Seventy-four percent of parents considered their child as healthy, and 63% stated their child appeared physically normal. Five percent of persons with handicaps had received special education services for 0-5 years, 32% for 6-10 years, 40% for 11-15 years, and 23% for 16-21 years.

Expected and Desired Post-School Outcomes

Parents were asked what they thought their child with handicaps would be doing once school was completed. In 63% of cases, parents had a plan in mind for what their son or daughter would be doing after the school years.

Independent Living

Table 2 shows that although more than 50% of parents expected their child to live at home once his or her schooling was completed, significantly fewer than that number desired this arrangement. Also, although only marginally significant, it was indicated that though few parents imagined their child would have his or her own apartment or live in the community, in each case parents felt these were desirable outcomes. None of the parents imagined or desired institutional placement as an option.

Vocation

There were no significant differences between the percentage of those who imagined their child would work in a sheltered workshop and those who desired this outcome. In each case these groups were represented by less than a third of the parents, perhaps

Table 2

What Parents Imagine Their Adult Children Will Be Doing Upon Their Completion of Schooling Compared With What They Would Like Them to Be Doing (N=85)

	Which of the following do you imagine your son (daughter) will be doing once he (she) is finished with school? %	Which of the following would you like to see your son (daughter) doing once he (she) is finished with school? %	Significance of difference
Living at home	54.8	25.6	0.0001
Living in a group home	28.6	37.8	0.16
Living in his (her) own apartment	28.6	42.7	0.06
Living in the community	27.4	41.5	0.06
Living in a state institution	0.0	0.0	1.00
Working in a sheltered workshop	28.6	20.7	0.24
Holding a job in the community	48.8	67.1	0.02
Not working at all	7.1	0.0	0.01
Earning less than minimum wage	22.6	1.2	0.0001
Earning minimum wage	26.2	27.2	0.89
Earning more than minimum wage	26.2	54.9	0.0001

indicating parents want more normalized outcomes. When one looks at the responses to the next statement, "Hold a job in the community," it appears that this may indeed be the case. Although only 50% of parents imagined their child would hold a job in the community, a significantly greater number of parents desired this outcome. This contention was further supported by the importance parents placed on wages as a desired outcome. The responses to three statements about wages (earn less than, more than, or the minimum wage) demonstrated that to a significant degree, parents (a) do not desire their children to earn less than minimum wage, (b) appear satisfied with the earning of minimum wage, but (c) would like their child to earn more than the minimum wage (statistically significant at the 0.05 level).

When asked to indicate the types of information that would help parents plan for their son's (daughter's) postschool life, 40% indicated more information about their son's/daughter's skills, 66% indicated more information about work options, 37% wanted more information about community living options, and 56% wanted more information about adult service agencies. Other kinds of assistance parents felt would be helpful were increased financial support, 35%; increased emotional support from their family, 20%; involvement in a parent support group, 24%; and increased professional support, 48%.

Transition Program Involvement

A comparison was made of transition program involvement experience and desired involvement in such programs to gain insight into parent satisfaction with involvement. Among the seven variables tested, several significant differences were found (see Table 3). First, parents were significantly less involved in transition programs than they desired. Nearly 70% desired involvement, whereas slightly more than 30% experienced involvement. Second, significantly more parents desired to have an equal part in decision making than were given the opportunity to do so. Third, although 12% indicated no involvement experience with the transition team, less than 2% indicated that they desired no involvement.

Table 3

Actual Transition Program Involvement versus Desired Transition Program Involvement (%).

	What kind(s) of involvement have you had in programs assisting your son (daughter) with the transition from school to work? (Groups 2 & 3, n=32) %	What kind(s) of involvement would you like to have in programs assisting your son (daughter) with the transition from school to work? Groups 1,2,3 & 4, n=85) %	Significance of difference
A member of the transition team	33.3	68.0	0.001
An equal part in decision making	54.5	78.7	0.01
Involved in finding potential job placements	37.5	54.7	0.11
Involved in finding potential community living arrangements	31.2	49.3	0.09
The person who makes all the final decisions	28.1	21.3	0.76
A resource person who is called upon only if needed	12.5	16.0	0.65
No involvement, I would rather leave it up to the professionals (teachers, rehabilitation counselors, etc.)	12.5	1.3	0.01

Parents also indicated that they wanted to be involved in finding job placements and community living arrangements more often than they had the opportunity to do so, although this was only marginally significant. As an aside, the authors suggest that particularly in regard to securing vocational placements, parents may be a largely untapped resource. Professionals often are new to a community or do not live in the community in which they are working. They may also have recently completed their education or have been educators and are therefore out of touch with the business world. Parents therefore may have greater success, or know of significantly more opportunities for employment within the community simply because they may have lived and worked in the community all their lives. Additionally, parents appear to desire a part in finding independent living arrangements for their children. Clearly professionals are particularly amiss if they do not recruit and encourage parent involvement in these areas.

Then, although fewer parents wanted to be the final decision maker than found themselves in that role, the difference was not significant. This was also the case for a small percentage of parents wanting to act as a resource. There was no significant difference between the percentage desiring that role and the percentage experiencing the role.

Program Involvement Options

Parents were then provided with four options from which to select their transition program involvement. Twenty-one percent (n=16) indicated they will be involved in a program (Group 1), 28% (n=22) indicated that they were currently involved (Group 2), 13% (n=10) indicated they had completed a program (Group 3), and 38% (n=29) indicated that they were unaware of any program (Group 4).

Analysis of variance indicated some significant differences among the groups. The ages of the children in Groups 1 (mean 16.3 years) and 4 (mean 16.9 years) were significantly different from Groups 2 (mean 20.1 years) and 3 (mean 22.7 years) at the .05 level. This may indicate that the children of parents in Group 4 are as yet too young to be involved in a transition program, offering hope that although parents reported knowing of no programs,

there may be one for them in the future. Second, members of Group 2 had spent significantly more time in special education services than those of the other groups. Members of Groups 2 and 3 had been contacted significantly more often than those of Group 4 by the school to enlist their involvement with the transition team which perhaps indicates that the school contact affects parent involvement, that is, parents infrequently initiate contact with the transition team, or more obviously that if there is no program, there is no contact. There were no significant differences between program involvement groups based upon handicapping condition. In other words, people with a variety of handicapping conditions were generally equally represented across the four groups.

As stated earlier, 63% of parents had a plan in mind for what their child would be doing once school was completed. It was also observed that parents involved in a transition program (Groups 2 and 3 vs. Group 4) were significantly more likely to have formulated a postschool plan for their son or daughter with handicaps. This finding may suggest that when parents are involved in a transition program, they will have a greater interest in the future of their offspring or at least may be provided with information, as evidenced by their forming a postschool plan.

Another significant difference was noted between parents' perceived knowledge of adult services. Groups 1 and 2 felt more aware of community adult service options than did Group 4. There was no difference between Group 3 and the other groups, possibly indicating that although parents anticipating program involvement or currently involved in a program may feel knowledgeable about adult services, once they are involved with them, they find they know less than they had thought. There was obviously a greater transition team involved for Groups 2 and 3 than for Group 4, and finally, a significantly greater percentage of persons who completed a transition program (Group 3) were employed than those who had not completed a transition program (Groups 1 and 4).

As indicated in Table 4, there was only one significant difference among the four groups regarding what parents imagined their son or daughter would be doing once he or she was

Table 4

Group Percentages Compared on the Question, "What do you imagine your son (daughter) will be doing once he (she) is finished with school?" (Check all that apply)

	% Group 1 (n=16)	% Group 2 (n=22)	% Group 3 (n=10)	% Group 4 (n=29)
Living at home	43.8	54.5	50.0	65.5
Living in a group home	31.3	36.4	40.0	24.1
Living in the community	43.8	22.7	20.0	20.7
Living in his/her own apartment	31.3	18.2+	70.0	13.8+
Living in a state institution	0.0	0.0	0.0	0.0
Working in a sheltered workshop	43.8	36.4	10.0	24.1
Holding a job in the community	43.8	45.5	70.0	41.4
Not working at all	6.3	0.0	10.0	10.3
Earning more than minimum wage	25.0	27.3	50.0	13.8
Earning minimum wage	37.5	18.2	50.0	24.1
Earning less than minimum wage	31.3	18.2	10.0	17.2

+ = Significantly less than Group 3.

Group 1 = Will be involved in a transition program.
Group 2 = Currently involved in a transition program.
Group 3 = Have completed a transition program.
Group 4 = There is no transition program that I am aware of.

finished with school. Parents in Group 3 were significantly more likely to think that their child would be living in his or her own apartment once schooling was over than were parents in Groups 2 and 4. This result is difficult to interpret in regard to Group 2, especially when one considers that the age difference between the groups is so small. One potential explanation is that perhaps transition teams do not begin actively seeking independent living arrangements until the final year of the transition program. Therefore, parents in Group 2 would not be aware of or involved in finding placements until that final year.

Another area explored what parents would be willing to do in order to be involved with the transition team. Specifically, parents responded to the question, "In order to be most involved in the transition process, I would be willing to...." by checking as many of the eight statements that followed, characterized the kinds of commitments they would be willing to make (see Table 5). To slightly varying degrees, parents indicated that they would be willing to make each of the commitments listed. Responses were then separated according to the four groups described earlier, and it was found that parents generally were in agreement among the groups about the varying involvement responsibilities. In fact, the only statistically significant difference was between Groups 3 and 4 in regard to the variable, "Assist in the training of other parents." This finding is not surprising, as parents who had completed a program were more willing to provide training than those who were not even aware of a program. One other variable was particularly worthy of note. Only 1.2% (one parent) indicated that she "would rather leave it up to the professionals." In other words, virtually all parents wanted to have some kind of involvement in the transition process.

General Discussion

The parents represented by this sample were generally those who might be characterized as "active," as all were involved in parents' groups to some extent (evidenced by the sample selection). Although more than one-third of parents were without programs, nearly two-thirds were involved or were anticipating involvement in some type of transition program. Significantly more parents wanted to be involved with the transition team and have an

Table 5

What Parents Are Willing to Do to Be Involved in Transition Programs (%)

	Group 1 (n=16)	Group 2 (n=22)	Group 3 (n=10)	Group 4 (n=29)
Attend weekly meetings	25.0	42.1	20.0	48.3
Attend monthly meetings	62.5	57.9	40.0	72.4
Take transition training	62.5	79.0	50.0	79.3
Solve logistical problems	43.8	57.9	40.0	43.8
Train other parents	56.3	73.7	90.0	51.7+
Participate in parent training group	50.0	73.7	70.0	65.5
Participate in parent support group	68.8	79.0	80.0	69.0
Leave everything up to the experts	6.2	0.0	10.0	0.0

+ = Significantly less than Group 3.

Group 1 = Will be involved in a transition program.
Group 2 = Currently involved in a transition program.
Group 3 = Have completed a transition program.
Group 4 = There is no transition program that I am aware of.

equal part in decision making than had the opportunity to do so. In fact, virtually all parents desired involvement. It is therefore the responsibility of the transition team to seek out parents and offer a range of involvement opportunities from which they can choose, acting with the assumption that parents generally do desire involvement. Parents also indicated that they had preferences for their child's postschool life, relating to not living at home, working in the community, and earning a wage equal to or greater than the minimum.

A great void remains, however, in the parent involvement literature; that is, little if any work has looked at how parent involvement affects outcomes. Questions need to be asked regarding whether (a) students whose parents were involved in their educational program achieve better, and (b) parent involvement in transition planning leads to a smoother transition to adult life, results in more options being offered to the transitioning individual, is correlated with maintained employment or higher status jobs, or results in better independent living options. Obviously there will be variability based upon what parents bring to the transition team and the abilities of their children; however, these questions need to be answered to support efforts aimed at facilitating parent involvement.

Note

The contents of this paper were developed under Federal contract number 300-85-0160 from Special Education Programs, under the Office of Special Education and Rehabilitative Services (OSERS), U.S. Department of Education. Points of view or opinions do not necessarily represent OSERS positions or policy.

References

Cole, D. (1985). Out-of-home child placement in family adaption: A theoretical framework. Unpublished manuscript.

Epps, S., & Myers, C. L. (1989). Priority domains for instruction, satisfaction with school teaching, and postschool living and employment: An analysis of perceptions of parents of students with severe and profound disabilities. Education and Training of the Mentally Retarded, 24(2), 157-167.

Hill, J., Seyfarth, J. P., Orelove, F., Wehman, P., & Banks, P. D. (1985). Parent/guardian attitudes toward the working conditions of their mentally retarded children. Unpublished manuscript, Virginia Commonwealth University, Richmond, VA.

Hill, J., Wehman, P., Hill, M., & Goodall, P. (1985). Differential reasons for job separation of previously employed mentally retarded persons across measured intelligence levels. In P. Wehman & J. Hill (Eds.), Competitive employment for persons with mental retardation: From research to practice (Vol. 1). Richmond, VA: Rehabilitation Research and Training Center, Virginia Commonwealth University.

McDonnel, J. (1987). The integration of students with severe handicaps into regular public schools: An analysis of parent perceptions of potential outcomes. Education and Training of the Mentally Retarded, 22(2), 98-111.

Myers, C. E., & Blacher, J. (1987). Parents' perceptions of schooling for severely handicapped children: Home and family variables. Exceptional Children, 53, 441-449.

Schutz, R. P. (1986). Establishing a parent-professional partnership to facilitate competitive employment. In F. R. Rusch (Ed.), Competitive employment issues and strategies. Baltimore: Paul H. Brookes.

Schwartz, C. (1970). Strategies and tactics of mothers of mentally retarded children for dealing with the medical care system. In N. Bernstein (Ed.), Diminished people: Problems and care of the mentally retarded. Boston: Little, Brown.

Seyfarth, J., Hill, J. W., Orelove, F., McMillan, J., & Wehman, P. (1987). Factors influencing parents' vocational aspirations for their children with mental retardation. Mental Retardation, 25(6), 357-362.

Wehman, P., Kregel, J., & Barcus, J. (1985). From school to work: A vocational transition model for handicapped students. In P. Wehman & J. Hill (Eds.), Competitive employment for persons with mental retardation: From research to practice (Vol. 1). Richmond, VA: Rehabilitation Research and Training Center, Virginia Commonwealth University.

Using a Cognitive-Process Approach to Teach Social Skills[1]

Lana Collet-Klingenberg and Janis Chadsey-Rusch

To date, few studies have focused on teaching appropriate social skills related to employment (Chadsey-Rusch, 1990). Most studies have utilized a traditional social skill training approach that typically consists of a rationale for why the behavior is important, examples of the behavior, an opportunity to practice the behavior, and feedback regarding performance. Social skills taught have included interviewing (Kelly, Wildman, Urey, & Berler, 1980), compliance (Karlan & Rusch, 1982), question-asking in conversations (Chadsey-Rusch, Karlan, Riva, & Rusch, 1984), and accepting criticism, taking a joke, and soliciting assistance (Shafer, Brooke, & Wehman, 1985). Although this research has been successful in teaching social skills, few studies have shown generalization of skills beyond the brief periods of initial procedural evaluation.

Recently, several researchers have advocated using a cognitive-process approach to teach social skills because it may promote generalization (Chadsey-Rusch, 1986; Hollin & Trower, 1988; Ladd & Mize, 1983; McFall, 1982; Park & Gaylord-Ross, 1989). This approach typically involves teaching a generative process of social behavior rather than specific component parts (Hollin & Trower, 1988). Individuals are taught to (a) formulate goals for social interactions, (b) decode or interpret salient cues inherent in social contexts, (c) decide on overt behaviors that would best meet the social goal(s) and the social situation, (d) perform the behavior, and (e) judge whether or not the performed behavior was effective in meeting their goal(s) and in eliciting positive or neutral feedback from the others involved in the interaction. This approach is promising because, once learned, individuals may then utilize it across a variety of social contexts.

Unfortunately, there are few demonstrations of a cognitive-process model being used to teach social skills. In one of the few studies, Park and Gaylord-Ross (1989) used this approach to teach social skills to three individuals with mental retardation who were

working in nonsheltered employment settings. One subject was trained to decrease mumbling and increase social initiations and conversational expansions. Contingent effects were seen in the training setting with the onset of process training and the effects generalized to the nontraining or work setting. Two additional subjects were trained to exhibit initiations, expansions, and terminations in conversations. First, the subjects were trained to exhibit these behaviors with a traditional social skills training approach, and then they were trained to exhibit the behaviors using a process approach. No generalization effects appeared in the criterion work setting until the process model was instituted. Park and Gaylord-Ross (1990) demonstrated that youth with mental retardation could learn the process for generating social behaviors, and that the process approach did lead to the generalization of behaviors across settings. Additionally, this study suggested that a cognitive-process approach may be more effective for training job-related social skills than a traditional social skills training approach..

Clearly, further work is needed to better understand the cognitive-process approach to teaching social skills. The primary purpose of this investigation was to determine if a cognitive-process approach could be learned by secondary-aged students with moderate mental retardation. In particular, specific attention was paid to the students' process of learning this approach. Generalization across untrained exemplars and settings was also measured.

Methods

Subjects and Settings

Three students participated; each attended a public, segregated school and was identified by his or her classroom teacher, speech therapist, and vocational coordinator as not handling criticism appropriately at school or while receiving training in a work site. Two of the students worked part-time in integrated employment settings and the other student was involved in an integrated work-training program.

Claire was 21 years old, had an estimated IQ score of 42 (Stanford-Binet), and was diagnosed as having Down Syndrome, diabetes, and visual impairment. Her expressive speech involved the use of three- to four-word utterances. Receptively, Claire followed two- and three-step directions (e.g., "I'll get ready and then wait for you here. Go talk to your teacher and meet me in the other room"). Claire worked 20 to 30 hours a week at a fast-food restaurant. She had been employed at this restaurant for nearly a year and most of her work was unsupervised by school staff (i.e., she was supervised by a restaurant manager, with occasional visits by a vocational trainer). Claire liked her job and appeared to look forward to going to work each day.

Diane was 19 and had an IQ score of 36 (Stanford-Binet). Her speech was difficult to understand and others frequently asked her to repeat herself. Diane could follow simple directions, such as "repeat after me," however, she had difficulty following two-step directions. Additionally, her attention span was short and she frequently had to be directed back on-task. Diane was involved in a work experience program at a local hospital two days a week (for a total of 6 hours). She worked with other students having disabilities and was constantly supervised by school staff. Her work supervisor commented that Diane was not really interested in her job.

Jenny was 19 years old, had an IQ of 52 (Stanford-Binet), and was diagnosed as having Down Syndrome. She was able to communicate using three- to five-word utterances and could carry on simple conversations (e.g., "I was working too slow. My boss told me to move. I tried to work faster."). She was also able to understand and follow complex directions and lengthy explanations. Like Claire, Jenny was employed 20-30 hours a week at a fast food restaurant. Her work was supervised by another worker at the restaurant and occasionally by school staff. She had worked at the restaurant for over a year and often spoke of how much she liked her job.

Social skill training was conducted in a classroom separate from the participants' homeroom. Generalization to natural environments was measured in the participants'

homeroom at school and at each participants' work setting, while generalization to untrained exemplars was probed during each training session.

Materials

Hand-drawn pictures of ten social situations depicting work-related criticism were used during training sessions. A training script, which accompanied the pictures, was developed to insure consistency across training sessions and across subjects.[2] Five of the pictures and scripts were used during training, and five were used for generalization probes.

At each work setting, the subjects wore micro-cassette recorders (Panasonic, RN-125, Micro-cassette Recorder t.m.). These recorders were worn throughout baseline and training to assess generalization. The recorders also were worn for 1 to 1.5 weeks prior to beginning baseline so that the subjects, and others at the work sites, would become accustomed to the presence of the recorder. Each recorder was outfitted with a blank 30 min tape before work.

In the classroom, a regular table-top recorder was used for 30 min per student, each day. Each student's 30 min segment was selected based on when the student was present at school and the type of activity that was occurring. For each student, a time was chosen during an activity that involved high rates of interaction between the student and a teacher, and where criticism was likely to occur. During the school taping, the classroom teacher activated the tape player at the beginning of the 30 min session. Thus, a total of 60 min of naturalistic recording was obtained for each participant each day.

Instructional Content

Social validation procedures similar to those reported by Goldfried and D'Zurilla (1969) were used to select samples of social situations and examples of appropriate social responses. The three teachers who referred the students (i.e., vocational trainer, classroom teacher, speech therapist) were asked to list examples of two types of criticism that occurred most often with each participant. The two types were personal criticism (e.g., "Your clothes are dirty") and work-related criticism (e.g., "You are late again").

Information gathered from teacher data was used to generate a list of training examples of the types of criticism that the student would likely receive in the work setting. Examples of criticism that were stated by more than one teacher, or that appeared frequently in the literature and were related to work performance (e.g., time management), were considered high priorities for training examples.

After a list of common criticisms was compiled, scenarios were generated that described interpersonal situations involving another person criticizing the participant. Pictures were drawn and scripts were written for use with these scenarios. Once the scenarios, complete with pictures and a short description, were developed, they were shown to a group of undergraduate college students majoring in special education ($\underline{N} = 12$). These students provided feedback on the clarity of the pictures and the short descriptions or scenarios accompanying the pictures. Each of the students was asked to rate each scenario on a scale of 1 to 5, with 1 being unclear and 5 being very clear. The social validation ratings for all 10 pictures ranged from 3.4 to 5.0 ($\underline{M} = 4.2$), which suggests that the pictures and scenarios were clear, thus, no revisions were made.

Dependent Variables and Data Collection Procedures

The social skill trained in this study was responding to criticism. Data on the students' responses to criticism were collected during training, during generalization probes to untrained stimuli after training, and in two generalization settings (work and school). Data on the acquisition of the cognitive-process components (described below) were also measured during training.

Responses to criticism were defined as any verbal behaviors that were displayed immediately after the criticism (i.e., within 10 sec.) such as talking, shouting, screaming, mumbling, or crying. If no response occurred after the criticism was given, this also was noted. Appropriate responses included acknowledgment of the criticism through an apology and a statement of correction, for example, "I'm sorry, I'll clean it up," or "I'm

sorry, I won't do it again." Inappropriate responses included not responding at all and excuses such as, "Well, Joe was talking to me."

Criticism was defined as any verbal admonishment from another person about the participant, the participant's behavior, or the participant's performance. Admonishments included statements of critique (e.g., "Your work yesterday was lousy") and statements of critique with a direction (e.g., "There are still smudges on that door, do it again").

Besides collecting data on responses to criticism, data also were collected on four variables related to the cognitive-process approach of responding to criticism: social decoding, social decision, social performance, and social evaluation skills. These behaviors were measured in the training setting after subjects were presented with five scenarios depicting workers being criticized.

Social decoding skills were defined as the skills used to discriminate or decode what was happening during a social interaction. Data were reported as percent correct and collected on nine behaviors: verbalizing the decoding rule, and asking and answering each of four questions about what was happening in the scenario, who was criticizing, why criticism was occurring, and how the person who was criticizing might feel. (For an example of correct responses to all components, see the training script in Table 1.) For all cognitive-process components, responses were scored as incorrect if students did not respond within 3 seconds to the scenario or stated the wrong rule, questions, or answers to the questions that accompanied each scenario.

Social decision skills were defined as the skills used to decide which response would best meet the demands of a social situation. When an individual is criticized, several responses may be possible. For example, one could get mad, cry, fail to respond, or apologize and offer to remedy the situation. In this study, data were collected on two behaviors: verbalizing the decision rule and stating the possible options to criticism (e.g., "Get mad") and the preferred option (i.e., apologizing and offering to remedy the situation).

Table 1

Example from Training Protocol

The trainer says:

"This is a picture of a worker like you. He is working slowly. His boss is telling him to hurry up and finish mopping because he has other chores to do. You be the worker and I'll be the boss. Remember to say the rules out loud and tell me what you would do." (Student's name), you need to mop faster, you have other chores to do.

The student says:
(Data is collected here)

(Social Decoding Skills)

1.0 "The first rule is understand what is going on.

1.1 So I ask myself, What is happening?
Well, here the boss is upset with me, I am taking too long to mop and have other chores to do.
1.2 Then I think to myself, who is upset with me?
The boss is upset with me
1.3 Next, I think to myself, why is the boss upset with me?
He is upset because I am taking too long to mop.
1.4 Then I think to myself, how does the boss feel?
He's mad."

(Social Decision Skills)

2.0 "The second rule is decide what to do.

2.1 I could ignore the boss or get mad. Those things wouldn't be good though because the boss would still be mad. Right? So, I am going to tell him that I am sorry and that I will try to work faster."

(Social Performance Skills)

3.0 "The third rule is do what I had decided to do.

3.1 So I say, I'm sorry, I'll work faster."

(Social Evaluation Skills)

4.0 "The fourth rule is what happened when I said I was s...

4.1 So, I ask myself, How does the boss feel now?
I don't think he's as mad now.
4.2 Then I think, how do I feel now? I feel better since I said I'm sorry.
4.3 Finally, I ask myself, Did I do the right thing? I think saying I'm sorry was a good thing to do."

Social performance skills were defined as the overt responses made to a social situation. Once an individual has been criticized, has decoded the situation, and has decided what to do, he or she acts on that decision; that is, the individual responds to the criticism. Data were collected on (a) the participants' verbalization of the performance rule and on (b) their response to the criticism.

Social evaluation skills were defined as the skills used to judge whether or not the overt social response met the demands of the social situation. Once a response to a criticism had been made, the participant had to consider if the response resulted in a positive feedback, or at least avoided negative feedback from the other individual involved in the interaction. Within this component, data were collected on seven behaviors: verbalizing the evaluation rule and asking and answering three questions about how the other individual in the interaction felt, how they (the participants) felt, and if they had done the right thing.

Experimental Design and Condition

A multiple-baseline design across subjects was utilized to assess the effects of the cognitive-process approach. Experimental conditions included (a) baseline and (b) cognitive-process training for all three subjects with the addition of (c) intensive skill training for one subject.

Baseline. Baseline measures were collected in the training, work, and school settings. Training baseline consisted of 5- to 10-min individual sessions assessing the student's responses to all 10 social scenarios involving criticism. The student was shown a picture, given a brief description of what was happening in the picture, and asked what she would do in that situation. The students' responses were scored as correct if they provided an apology and a statement of correction. Data was only collected on the performance component of the cognitive-process approach because the other three components (i.e., decoding, deciding, and evaluating) did not occur naturally in an overt manner prior to training. During baseline, no feedback or reinforcement was given; however, each participant was praised occasionally for paying attention and listening.

Baseline measures also were collected during school hours when each student was in the classroom and at each student's work site. Each student's responses to criticism were tape-recorded in the generalization environments. At the end of the school day, each participant gave the tape recorder to the classroom teacher. The first author and an additional observer listened to the tapes and developed written instances of criticism and each student's response to criticism.

To ensure that enough opportunities to respond to criticism existed throughout this investigation, each student's vocational trainer was enlisted to deliver at least three criticisms during the 30-min taping period, 3 days per week (2 days per week for the student in the work experience site). Although these instances of criticism were planned, they were legitimate (i.e., the students were not criticized unjustly, or for things they were not responsible for). Even though the vocational trainers were aware that the students were participating in a study, they were naive to the specific purpose of the study.

Cognitive-process training. Training occurred three times per week for each student; sessions lasted 20 to 30 min each. Each training session was conducted by the first author. The four components (i.e., decoding, decision-making, performance, and self-evaluation) were taught using modeling, rehearsal, and feedback. At the beginning of each session, the trainer explained what was to be taught and then gave a rationale for why responding to criticism appropriately was important. Next, the trainer showed a picture of a social situation involving criticism. The trainer then modeled the cognitive-process approach. First, the trainer stated the social decoding rule (i.e., "The first rule is to understand what is going on"). Then she described the situation in the picture verbally by pointing out who was criticizing, what was happening, why it was happening, and how the individual who was criticizing might feel. Then, the trainer modeled the social decision component (i.e., "The second rule is, decide what to do"), identified the choices for responding, and chose a response to the social interaction. Next, the trainer modeled the social performance component by stating the rule (i.e., "Do what I decided to do"), and made the social

response. Finally, the trainer modeled the social evaluation component by verbalizing the rule (i.e., "What happened when I said I was sorry?"), and evaluated her performance by describing how the boss might feel now, how she felt now, and if her response to the situation was successful or unsuccessful.

After the trainer modeled all of the components, data was collected on the student's verbal rehearsal of the four process components in response to the same picture. During this rehearsal situation, the trainer played the boss, or the person doing the criticizing. If the participant had difficulty with any of the components, she was given verbal prompts to complete the process. Social reinforcement was used for correct responding. All five social scenarios were used during each training session (resulting in five training trials per session) but were presented in random order. A general summary of the training procedures are included in Table 2.

Intensive skill training. Intensive skill training was implemented on the social skill decoding component with Diane after training on all four components resulted in little progress. The training strategy was the same as described above, except that after modeling the entire process the trainer provided intensive instruction on the first component only (social decoding). Here the trainer modeled the scenario again, stopping after the social decoding rule. Diane just pr d the social decoding component for two trials.

Observers and Agreement

The first author and a second observer were used throughout the study to take data on training and to transcribe the tapes from the school and work settings. The second observer assessed reliability on training and generalization data. This second observer was an undergraduate student in special education and was naive about the purpose of the study. Before beginning to collect reliability measures, both were trained on the forms and procedures to be used and practiced transcribing generalization tapes to a criterion level of 80%. During training, the second observer collected data simultaneously with and independently of the first author for 30% of the training sessions. Agreement was

Table 2

General Social Skills Training Procedures

1. Presentation of training summary and rationale.
2. Presentation of first training picture and verbal description of social situation.
3. Model of social skills rules, as applied to situation.
   a. decoding
   b. decision
   c. performance
   d. evaluation
4. Role-play of social skills rules, as applied to same social situation.*
   (Prompts given for incorrect responding and social reinforcement given for correct responding.)
   a. decoding
   b. decision
   c. performance
   d. evaluation
5. Steps 2 - 4 repeated with four different pictures.
6. Five generalization probes administered using untrained pictures and social situations.*

*Data collected during this step.

calculated by taking the number of agreements on responses made by the subjects (i.e., correct or incorrect responses) and dividing by the number of agreements plus the number of disagreements (multiplied by 100). Agreements were defined as both observers recording the same response from a student on a particular item. Disagreements were defined as each observer recording a different response. Interobserver agreement scores for Claire were 93% (80% to 100%); 93% for Diane (91% to 100%); and 91% for Jenny (89% to 100%).

The data from the micro-cassette tapes, used in the work and school settings, also were evaluated by the second observer. Each criticism was transcribed, verbatim, onto paper. Evaluating the transcripts consisted of counting the number of appropriate and inappropriate responses made by the students as well as rating the content of each student's responses. Reliability was assessed for 36% of the generalization tapes.

Agreement was calculated by taking the number of agreements and dividing by the number of agreements plus the number of disagreements and multiplying by 100. Agreements were defined as both observers rating the responses to criticism the same way. Specifically, each response was rated a minus (-) if it did not contain both a statement of apology (e.g., "I'm sorry") and a corrective statement (e.g., "I'll do it over"). If the response included both an apology and a statement of correction (e.g., "I'm sorry, I'll try to work faster"), it was rated a plus (+). Disagreements were defined as each observer rating a participant's response differently. Inter-rater agreement scores for the generalization transcripts ranged from 50 to 100% ($\underline{M}$ = 97%). Reliability scores for each student were as follows: Claire, 100%; Diane, 50 to 100% ($\underline{M}$ = 92%); and Jenny, 100%.

Results

Training Data

Figure 1 shows the baseline and training data for Claire and Jenny for each of the social skill components trained (i.e., decoding, deciding, performing, and evaluating). Although the data for Claire and Jenny show improving performance across all four components,

Diane's data (shown in Figure 2) indicate that her performance did not improve as rapidly or consistently as intervention continued.

At the beginning of training, Claire performed only 7% of the decoding components, 0% of the deciding components, 10% of the performing components, and 14% of the evaluating components. When the study was terminated (Day 12), she performed 96% of the decoding components, 100% of the deciding components, 100% of the performing components, and 94% of the evaluating components. Claire's performance on the decoding and evaluating components showed a steadily increasing trend throughout training. Alternatively, the number of correct steps that she achieved on the middle components (i.e., deciding and performing) stayed at near zero levels until the fourth day of training, when both began to increase more rapidly.

Jenny's performance was similar to Claire's. On the first day of training Jenny performed 33% of the decoding components, 0% of the deciding components, 0% of the performing components, and 46% of the evaluating components. At the end of training (Day 8), she performed 93% of the decoding components, 100% of the deciding components, 100% of the performing components, and 100% of the evaluating components. As mentioned above, Jenny's overall performance was very much like Claire's. That is, initially she responded somewhat higher on the first and last components (i.e., decoding and evaluating) than on the middle two (i.e., deciding and performing). On the third and fourth days of training, the number of correct responses increased greatly for deciding and performing, so that by the fifth day of training there was little difference among the data for all four components.

Baseline and training data for Diane are displayed in Figure 2. Diane's training performance did not follow the same pattern as Claire's and Jenny's. Initially, Diane completed 11% of the decoding components, 0% of the deciding components, 0% of the performing components, and 31% of the evaluating components. These levels of performance remained relatively stable until after the intensive training strategy was

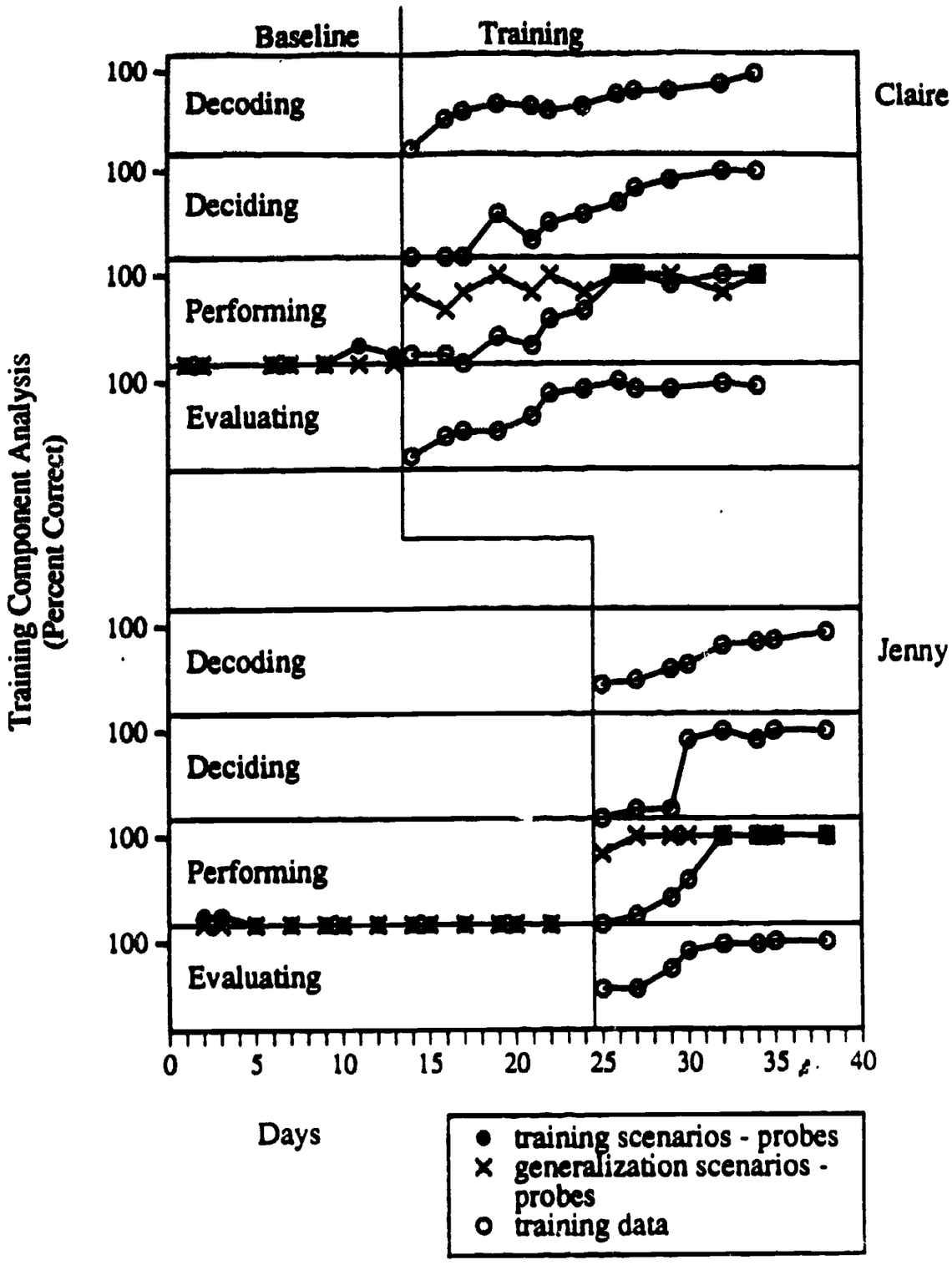


Figure 1. Percent correct on process component steps and generalization probes to untrained exemplars.

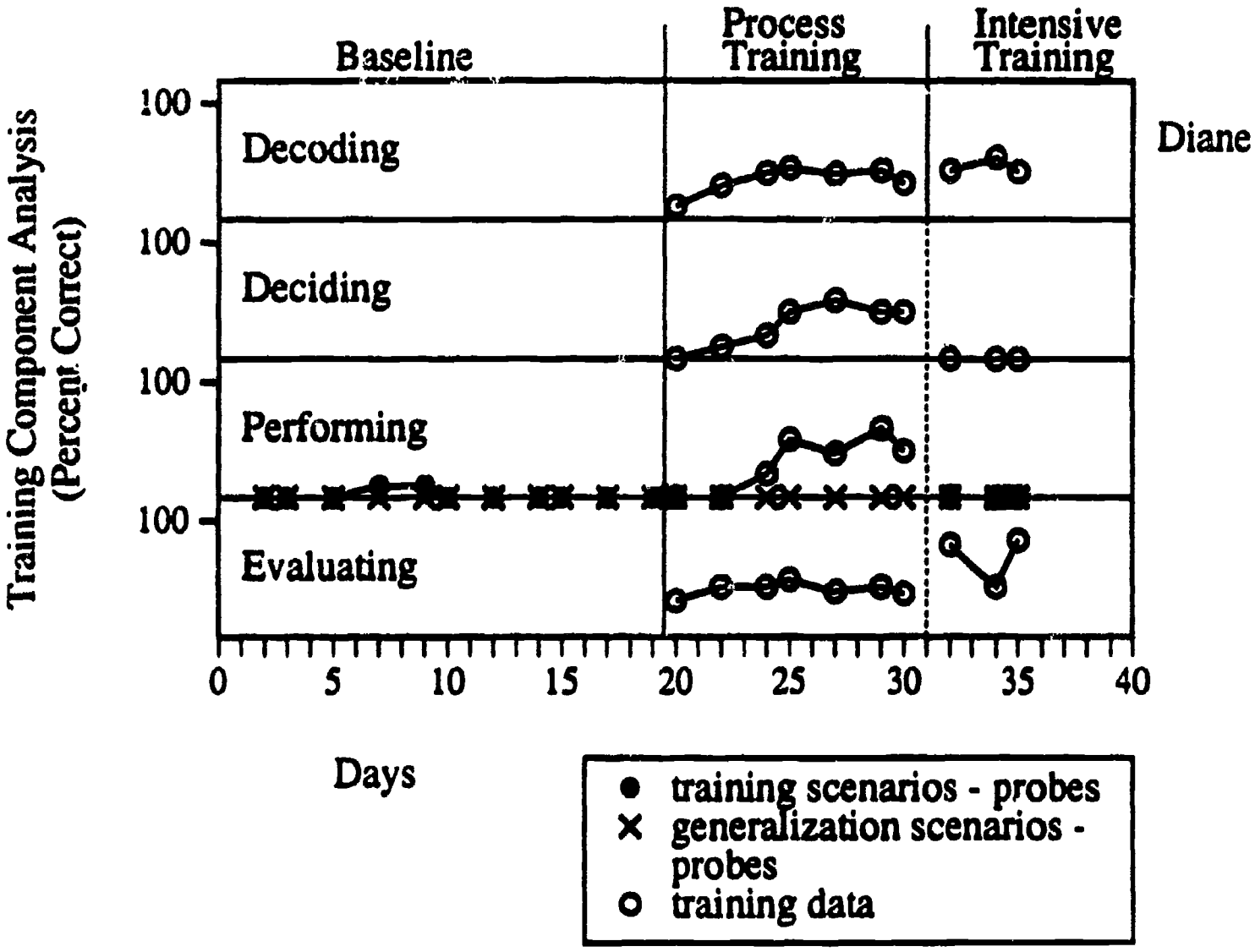


Figure 2. Percent correct on process component steps, intensive skill training, and generalization probes to untrained exemplars.

implemented with only the decoding component. After three days of this training, Diane completed an average of 45% of the decoding components, which was higher than the 34% that she had averaged previously. Interestingly, her performance on the deciding and performing components dropped to zero, but raised to an average of 68% on the evaluating component. Thus, even though intervention was not implemented with the evaluation component, it may have been affected by the training on the decoding component, showing a possible relationship between the two components.

Generalization to Untrained Scenarios

Figure 1 shows that Claire and Jenny exhibited zero levels of performance to untrained scenarios during baseline. Once training was introduced for both participants, performance increased from 0% to 80%, showing a rapid level change. Performance was relatively stable for Claire, dropping to 60% on the second training day and alternating between 80% and 100% for the next five days. Her performance stabilized at 100% on the eighth day of training and remained there for the duration of the study. Jenny reached 100% accuracy on the second day of training and stayed there for the remainder of the study. It is interesting to note that although Claire's and Jenny's rate of correct responding on the probes to untrained scenarios increased substantially with the onset of training, their number of correct responses on the performance component of training did not reflect similar changes.

As can be seen in Figure 2, Diane also exhibited zero levels of performance for untrained stimuli during baseline. Her performance did not change at all with the introduction of training and remained at 0% for the remainder of the study.

Generalization to Natural Environments

Data collected in the natural environments showed little indication of generalization. Unfortunately, the generalization results were compromised because few instances of criticism actually occurred in the generalization environments. Even though vocational trainers had been asked to criticize the students (when appropriate), few instances of criticism occurred when the students were being tape recorded. For example, in the work

setting the number of opportunities for responding to criticism varied across days with the mean number of opportunities being 1.20.

In both the school and work settings there was little change in performance from baseline to training; However, on the 28th day of the study, Claire responded correctly to criticism on one of three opportunities in the school setting. She also demonstrated a correct response in the work setting on the 26th day of the study.

Anecdotal data. Near the end of the study, Jenny's vocational trainer reported that Jenny had responded to criticism in a different way than she ever had before. The vocational trainer called the senior author and said that even though she did not know what the students were being trained to do when criticized, Jenny had responded in a manner not previously witnessed by the trainer. The vocational trainer stated that when she criticized Jenny (on the 31st and again on the 36th day of training), Jenny responded with an apology and a statement of correction. Unfortunately, this did not occur during a time when the participant was wearing the tape recorder.

Discussion

With a cognitive-process approach, individuals are taught a generative process of social behavior rather than specific component behaviors (Hollin & Trower, 1988). Although this process has been described theoretically (e.g., Argyle & Kendon, 1967; Ladd & Mize, 1983; McFall, 1982), there are few applications of its use. Since the approach relies on receptive and expressive language skills, some may think it an inappropriate strategy for individuals with mental retardation. However, Park and Gaylord-Ross (1989) demonstrated the effectiveness of using this approach with individuals with mental retardation.

This study, too, demonstrated that two of the three participants with moderate mental retardation could also learn this approach. That the approach teaches a strategy that should be generic to all social situations would seem to be desirable. Additionally, a cognitive-process approach would seem important because it actively involves learners and requires them to analyze, discriminate, and respond to multiple stimuli. Interestingly, both Jenny

and Claire (the two participants who learned the process) commented that they had to "think so hard" during training. Perhaps, traditional interventions have not taught individuals with moderate mental retardation to be active participants in their learning, but instead have involved them only as passive learners who make simple responses to noncomplex stimuli.

One student, Diane, demonstrated consistently low rates of performance throughout training. Although no definitive reasons can be identified for her performance, a number of differences exist between Diane and the other two participants. First, her IQ score was lower than Jenny's and Claire's. Second, Diane was not particularly interested in her job, did not spend much time at work, and needed a lot of supervision. Perhaps Diane was not motivated enough to learn the process and did not care whether or not she responded to criticism in an appropriate manner. Clearly, individuals targeted for training must have a vested interest in the goal of training if training is to be effective (Chadsey-Rusch, in press).

Another possible explanation for Diane's lower performance could be that the process was too complicated for her to learn as it was presented (i.e., the strong emphasis on language) (Whitman, 1990). It is possible that adaptations could be made for individuals who have trouble learning this approach. One alternative that was explored in this study was to train one component at a time, thus reducing the number of steps that the individual has to learn at one time. Although this alternative was explored only briefly, data indicated that the procedure resulted in performance increases on the trained component (decoding). Another alternative that might facilitate learning would be to use picture cues along with training. Picture cues reduce language demands and have been used in combination with self-instructional strategies to teach vocational skills (Agran, Fodor-Davis, Moore, & Deer, 1989; Wacker & Berg, 1983).

Certainly an important issue to consider from this study was the lack of generalization to the natural environment. The lack of generalization to the school and work settings may have been due to a number of factors. First, Claire and Jenny seemed to be in the

acquisition stage of learning the process; that is, they did not seem fluent in using the components. It may be that students with moderate mental retardation must practice complex strategies an undetermined amount of time prior to being able to generalize their use of the strategy. Future research should document where in the training process generalization begins to occur; this type of documentation has only occurred in a few studies (e.g., Hughes & Rusch, 1989).

A second factor limiting generalization may have been due to an insufficient number of opportunities to measure generalization. It is entirely possible that occurrences of criticism in the natural environment were not enough to measure the extent of the generalization. Future research should focus on other methods of collecting this type of data (i.e., behaviors that occur inconsistently or occur in low frequencies). Such methods might include using self-reports in combination with co-worker and supervisor reports or planting an unknown observer in the natural environment.

Because criticism occurred infrequently, one might question whether handling criticism appropriately was an appropriate target for training. Work-related literature, however, shows that employers find accepting criticism to be an important skill for employees to have (Salzberg, Agran, & Lignugaris/Kraft, 1986). Further, none of the three subjects responded to criticism appropriately and one subject (Jenny) was nearly fired from her job for not responding to criticism appropriately.

Another issue that may have affected the generalization results concerns the setting used for training. In this study, and in the study by Park and Gaylord-Ross (1989), training was conducted in analogue settings. Investigators have suggested that generalization results may be enhanced by training in the natural environment (Brown, Nisbet, Ford, Sweet, Shiraga, York, & Loomis, 1983; Coon, Vogelsberg, & Williams, 1981; Marchetti, McCartney, Drain, Hooper, & Dix, 1983). However, it may not always be convenient for staff to conduct in-vivo training. For example, some important behaviors (e.g., responding to criticism) occur infrequently, making it difficult for staff always to be present when they

occur. One solution to this might be to have co-workers implement training (Nisbet & Hagner, 1988; Rusch & Menchetti, 1981). This type of training, however, may prove to be obtrusive in terms of drawing unwanted attention to the worker or interrupting naturally occurring interactions; it may also impede the natural development of friendships between the worker and his or her co-workers (Chadsey-Rusch, 1990). Another concern is that co-workers may not always work closely enough to provide training when needed, and it may be difficult for co-workers to teach a generative process of social skills.

The unique and promising feature of a process approach is that it may facilitate the generalization of learned skills by giving the learner a generic strategy for dealing with a variety of social situations. Thus, if a cognitive-process approach does indeed facilitate generalization, perhaps it holds the answer for training individuals who are placed in work settings where in-vivo training is not always possible. Future research must address this promise more fully.

One of the interesting findings from this study was that performance to untrained stimuli did not occur until after process training was implemented. That is, repeated exposure to the probe scenarios did not result in the participants learning the targeted response. This result suggests that the process does indeed play a role in generalization. Also, even though Claire and Jenny had reached criterion on the performance component in training, they did not generalize their responses to the natural settings, indicating that proficiency on the performance component alone does not guarantee generalization to the natural environment. Clearly, future research needs to investigate the role that a process approach may play in facilitating generalization.

Another interesting finding from this study was the possible relationship between the first and last components (i.e., decoding and evaluating) as evidenced by Diane's data. In decoding, individuals may consider the social situation in terms of what is happening, why it is happening, who is involved in the interaction, and how the person feels. In evaluating, individuals examine what has just taken place by asking themselves how

others feel, how they feel, and whether they think they did the right thing. Given these similar features of the two components, it is not surprising that when the intensive training strategy was implemented with Diane, her performance increased not only on the trained component (decoding), but also on the evaluation component. Future research is needed to examine the relationship between the components.

A final issue concerns training specific responses to criticism. It could be argued that participants were trained to be passive in responding to criticism by apologizing and offering to remedy the situation. Although this is a valid argument, it should be noted that when an employer or a supervisor criticizes a worker, it may be best for that worker to avoid arguing. The use of a process approach, however, could allow the individual greater freedom in choosing responses, as well as teaching learners to discriminate between appropriate and inappropriate instances of criticism.

In summary, this study is one of the few attempts to use a cognitive-process approach to teach social skills to individuals with moderate mental retardation. The results from this study showed that two of the three participants learned the approach and evidenced generalization to untrained stimuli. It is possible that this type of training is more effective with some individuals than others, particularly those who are motivated to learn, have higher IQ scores, and better language skills. For those individuals who have difficulty acquiring the process, steps may be taken to modify the procedures, as was done in this study. Because appropriate social skills are crucial to the success of workers with handicaps in competitive employment settings (Chadsey-Rusch, 1986; Greenspan & Shoultz, 1981; Salzberg, McConaughy, Lignugaris/Kraft, Agran, & Stowitschek, 1987), there is a need for training approaches that are effective, convenient to use, and teach the complexities of social interactions. The cognitive-process approach may be one strategy that meets that need; however, further research is needed.

Notes

[1]This study was supported in part by the Office of Special Education and Rehabilitative Services, United States Department of Education, pursuant to contract number OEG 300-85-0160. However, the opinions herein do not necessarily reflect the position or policy of the Office of Special Education, United States Department of Education.

[2]A copy of this material can be obtained by writing to: Janis Chadsey-Rusch, Transition Institute, College of Education, University of Illinois, 110 Education, 1310 S. Sixth St., Champaign, IL 61820.

References

Agran, M., Fodor-Davis, J., Moore, S., & Deer, M. (1989). The application of a self-management program on instruction-following skills. Journal of the Association for Persons with Severe Handicaps, 14, 147-154.

Argyle, M., & Kendon, A. (1987). The experimental analysis of social performance. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 3, pp. 55-98). New York: Academic Press.

Brown, L., Nisbet, J., Ford, A., Sweet, M., Shiraga, B., York, J., & Loomis, R. (1983). The critical need for nonschool instruction in educational programs for severely handicapped students. The Journal of the Association for Persons with Severe Handicaps, 8, 71-77.

Chadsey-Rusch, J. (1986). Identifying and teaching valued social behaviors. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 273-287). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J. (1990). Social skills training. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues. Sycamore, IL: Sycamore Publishing Company.

Chadsey-Rusch, J. (in press). Toward defining and measuring social skills in employment settings. American Journal on Mental Retardation.

Chadsey-Rusch, J., Karlan, G. R., Riva, M. T., & Rusch, F. R. (1984). Competitive employment: Teaching conversational skills to adults who are mentally retarded. Mental Retardation, 22, 218-225.

Coon, M., Vogelsberg, R. T., & Williams, W. (1981). Effects of classroom public transportation instruction on generalization to the natural environment. Journal of the Association for Persons with Severe Handicaps, 6, 46-53.

Goldfried, M. R., & D'Zurilla, T. J. (1969). A behavior-analytic model for assessing competence. In C. D. Spielberger (Ed.), Current topics in clinical and community psychology (Vol. 1). New York: Academic Press.

Greenspan, S., & Shoultz, B. (1981). Why mentally retarded adults lose their jobs: Social competence as a factor in work adjustment. Applied Research in Mental Retardation, 2, 23-38.

Hollin, C. R., & Trower, P. (1988). Development and application of social skills training: A review and critique. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.), Progress in behavior modification (Vol. 22, pp. 165-214). Newbury Park, CA: Sage.

Hughes, C., & Rusch, F. R. (1989). Teaching supported employees with severe mental retardation to solve problems. Journal of Applied Behavior Analysis, 22, 365-372.

Karlan, G. R., & Rusch, F. R. (1982), Analyzing the relationships between acknowledgement and compliance in a nonsheltered work setting. Education and Training of the Mentally Retarded, 17, 202-208.

Kelly, J. A., Wildman, B. G., Urey, J. R., & Berler, E. S. (1980). Small group behavioral training to improve the job interview skills repertoire of mildly retarded adolescents. Journal of Applied Behavior Analysis, 13, 461-471.

Ladd, G. W., & Mize, J. (1983). A cognitive-social learning model of social-skill training. Psychological Review, 90, 127-157.

Marchetti, A., McCartney, J., Drain, S., Hooper, M., & Dix, J. (1983). Pedestrian skills training for mentally retarded adults: Comparison of training in two settings. Mental Retardation, 2, 107-110.

McFall, R. M. (1982). A review and reformulation of the concept of social skills. Behavioral Assessment, 4, 1-33.

Nisbet, J., & Hagner, D. (1988). Natural supports in the workplace: A reexamination of supported employment. Journal of the Association for Persons with Severe Handicaps, 13, 260-267.

Park, H. S., & Gaylord-Ross, R. (1989). A problem-solving approach to social skills training in employment settings with mentally retarded youth. Journal of Applied Behavior Analysis, 23, 373-380.

Rusch, F. R., & Menchetti, B. M. (1981). Increasing compliant work behavior in a non-sheltered work setting. Mental Retardation, 19, 107-111.

Salzberg, C. L., Agran, M., & Lignugaris/Kraft, B. (1986). Behaviors that contribute to entry-level employment: A profile of five jobs. Applied Research in Mental Retardation, 7, 299-314.

Salzberg, C. L., McConaughy, K., Lignugaris/Kraft, B., Agran, M., & Stowitschek, J. J. (1987). Behaviors of distinction: The transition from acceptable to highly-valued worker. The Journal for Vocational Special Needs Education, 10, 23-38.

Shafer, M. S., Brooke, V., & Wehman, P. (1985). Developing appropriate social-interpersonal skills in a mentally retarded worker. In P. Wehman & J. W. Hill (Eds.), Competitive employment for persons with mental retardation: From research to practice (Vol. 1, pp. 358-375). Richmond: Rehabilitation Research and Training Center, Virginia Commonwealth University.

Wacker, D. P., & Berg, W. K. (1983). Effects of picture prompts on the acquisition of complex vocational tasks by mentally retarded adolescents. Journal of Applied Behavior Analysis, 16, 417-443.

Whitman, T. L. (1990). Self-regulation and mental retardation. American Journal on Mental Retardation, 94, 347-362.

An Analysis of Minority Status Supported Employees in Relation to Placement Approach and Selected Outcomes

Philip G. Wilson, Mark F. O'Reilly, Frank R. Rusch, and Jho-Ju Tu

Persons with disabilities now account for nearly one-sixth of the nations population. Unemployment and underemployment among individuals with disabilities in this country have been estimated to be as high as 86% (Kiernan & Bruininks, 1986). One employment outcome that has emerged to assist persons with disabilities making the transition from school to work is supported employment (Rusch, 1990; Rusch & Hughes, 1990). Supported employment focuses upon paid work in integrated work settings for individuals, who, because of their handicaps, require ongoing services to perform that work (Federal Register, August, 1987).

Over the past several years we have learned much about the demographic characteristics of persons who have received supported employment services in Illinois (Ellis, Rusch, Tu, & McCaughrin, 1990), Virginia (Kregel, Wehman, Revell, & Hill, 1990), Pennsylvania (Vogelsberg, 1990), and elsewhere (cf. Wehman, Moon, Everson, Woods, & Barcus, 1989). To date, however, we have not learned much about minority enrollment in supported employment. The importance of establishing an understanding of participation and outcome variables associated with supported employment by minority status groups is underscored by predictions that nearly 30% of net additions to the workforce between 1985 and 2000 will be minority-status workers (Johnston & Packer, 1987). Currently, participation and outcomes associated with minority-status involvement in supported employment have not been investigated.

The purpose of the present study was to investigate potential differences between nonminority and minority (sub)groups in terms of placement approach utilized and employment outcomes achieved. Additionally, this study compared placement approach

and employment outcomes of nonminority and minority-status supported employees. The supported employment outcomes addressed included: (a) wages earned per hour, (b) hours worked per week, and (c) monthly wages.

Method

Sample Derivation

The sample utilized in this study was drawn from 869 supported employees served by community rehabilitation facilities located throughout the state of Illinois during fiscal year 1989. Approximately 20% (n=173) of the individuals employed with support had minority status. The 173 minority status individuals included representation by four subgroups: (a) Black (81%; n=140), (b) Hispanic (12%; n=21), (c) Asian (6%; n=10), and (d) American Indian (1%; n=2). Table 1 presents demographic (i.e., mean IQ, mean age, gender, and primary disability), program characteristics (i.e., previous and current placement), and employment outcomes (i.e., mean wages per hour, mean hours worked per month, and mean wages per month) for nonminority, all minority, and each minority subgroup, respectively.

The most frequent primary diagnosis of nonminority and minority-status supported employees was mental retardation (66%; n=456, and 70%; n=115, respectively). Similarly, the most frequent primary diagnosis for both Black and Hispanic groups was mental retardation (68%; n=95, and 70%; n=16, respectively). The most common primary diagnosis for the Asian group was mental illness (60%; n=6). The mean IQ scores were 56 and 60, respectively, for nonminority and minority-status individuals.

The average ages of nonminority and minority-status supported employees were 33 and 30 years, respectively. About 57% of the nonminority supported employees in the sample were male. Approximately 73% of minority-status individuals included in the sample were male. Some variation between minority-status groups was observed for IQ, age, and gender as can be seen in Table 1.

Table 1

Demographics, Placement (Previous and Current), and Employment Outcomes for Minority and Nonminority Status Supported Employees (N = 869)

	Nonminority (N=696)	Minority (N=173)	Black (N=140)	Hispanic (N=21)	Asian (N=10)
Primary Disabilities					
MR	66% (n=456)	70% (n=115)	68% (n=95)	70% (n=16)	40% (n=4)
MI	18% (n=126)	15% (n=30)	16% (n=22)	9% (n=2)	60% (n=6)
Other	16% (n=114)	15% (n=26)	16% (n=23)	14% (n=3)	0% (n=0)
Demographics					
IQ (mean)	56	60	61	57	53
Age (mean)	33	30	31	27	28
% Male	57% (n=396)	73% (n=125)	75% (n=105)	76% (n=16)	40% (n=4)
Previous Placement					
Developmental Training	19% (n=134)	14% (n=24)	14% (n=19)	24% (n=5)	0% (n=0)
Regular Workshop	32% (n=224)	14% (n=24)	15%$ (n=21)	5% (n=1)	9% (n=2)
Work Adjustment Training	11% (n=79)	19% (n=32)	16% (n=22)	38% (n=8)	9% (n=2,
Current Placement					
Individual	55% (n=367)	49% (n=84)	51% (n=70)	43% (n=9)	50% (n=5)
Group	41% (n=227)	43% (n=74)	44% (n=60)	48% (n=10)	40% (n=4)
Crew	4% (n=28)	7% (n=9)	4% (n=6)	9% (n=2)	10% (n=1)
Employment Outcomes					
Wages/Hour	$3.29	$3.91	$3.87	$4.60	$3.04
Hours/Month	87.5	92.6	92.1	98.7	86.3
Wages/Month	$288	$362	$373	$450	$270

Typically, nonminority status employees participated in one or all of the following programs prior to supported employment: (a) developmental training (19%), (b) regular workshop placement (32%), and (c) work adjustment training (11%). Less than one-half the individuals in the combined minority-status sample participated in the following programs prior to involvement in supported employment: (a) developmental training (14%), (b) regular workshop (14%), and (c) work adjustment training (19%). Program participation varied between each minority group as illustrated by Table 1.

Nonminority status supported employees most frequently worked in individual (55%; N=367), followed by group (41%; N=227) and crew (4%; N=28) placements. For minority status supported employees the most common placement approach was individual (49%; N=84), followed by group (43%; N=74) and crew (7%; N=9) placements.

Nonminority status supported employees worked an average of 87 hours per month and earned wages of $3.29, which resulted in a monthly income of $288. Minority-status supported employees worked an average of 93 hours per month and earned wages of $3.91 per hour, which resulted in an income of $362 per month.

Data Source

All data included in this study were derived from the Illinois Supported Employment Project (ISEP) data management information system (Ellis et al., 1990). In fiscal year 1989, data on 869 supported employees were available.

Information submitted on two reporting forms to ISEP by participating rehabilitation agencies was used to conduct this study. The first form, Worker Characteristics, was completed for each person who entered supported employment. Agency personnel reported demographic and assessment information on the Worker Characteristics form (e.g., age, sex, race, primary disability, IQ score, previous placements, current placement approach). Also, each month participating programs provided updates on target employees using the Benefit Cost Analysis form. This form was used by participating agencies to report

the number of hours worked per month, wages earned per hour, and wages earned per month.

Dependent and Independent Variables

Dependent variables analyzed in this study included: (a) primary disability, (b) IQ, (c) age, and (d) gender. Dependent variables related to program characteristics included: (a) previous placement (i.e., developmental training, regular workshop, and work adjustment training), (b) placement approach (i.e., individual placements, group placements, and mobile work crews), (c) wages earned per hour, (d) hours worked per month, and (e) monthly earnings.

Nonminority and minority-status served as the independent variable. Three levels of minority-status were included: (a) Black, (b), Hispanic, and (c) Asian.

Data Analysis

Two levels of analyses were performed. The first level of analysis sought to identify potential differences between minority subgroups in relation to supported employee and program characteristics. The second level of analysis compared nonminority and minority-status supported employees in relation to individual and program characteristics.

Minority subgroup analysis. This analysis examined whether differences existed between minority subgroups in relation to: (a) IQ scores, (b) age, (c) wages per hour, (d) hours worked per month, and (e) monthly wages. These analyses were conducted utilizing a one-way analysis of variance (ANOVA). Post hoc comparison tests were conducted using Tukey's Studentized Range Test to determine which subgroups had significant differences in mean scores on each of the dependent measures. In addition, chi-square tests were conducted to determine if significant differences existed between placement model and levels of minority status.

Nonminority and minority comparison. The second level of analysis involved determining whether there were differences between nonminority and minority-status supported employees. A one-way ANOVA was conducted using nonminority and

minority membership as the independent variable. Dependent variables included: (a) IQ score, (b) age, (c) wages per hour, (d) hours worked per month, and (e) monthly income. Post hoc analyses were conducted using Tukey's Studentized Range Test to determine where significant differences between means existed. Chi-square analysis was used to determine if significant differences existed between placement model and nonminority and minority-status.

Results

Minority Subgroup Analysis

One-way analysis of variance showed there were no significant differences between minority subgroups for IQ score, age, average hours worked per month, or mean monthly wages (see Table 2). A significant difference, however, was detected for mean wages per hour between minority subgroups, $F(2,163)=4.75$, $p<.01$. Post hoc comparison analysis using Tukey's Studentized Range Test, revealed that Hispanics earned significantly more wages per hour than Asians ($p<.05$).

A chi-square analysis determined there was no significant difference between the frequency of placement approach utilized across minority subgroups.

Nonminority and minority-status comparison. The results of the one-way ANOVA revealed that the mean IQ score of minority-status supported employees ($\bar{x}=60.1$) was significantly higher than that of nonminority supported employees ($\bar{x}=56.5$), $F(1,565)=8.57$, $p=.0036$ (see Table 3). The one-way ANOVA also indicated that the average age of minority-status supported employees was significantly lower ($\bar{x}=30$) than nonminority supported employees ($\bar{x}=33$), $F(1,849)=15.33$, $p=.0001$ (see Table 3). No significant differences were found between groups in mean number of hours worked per month or average hourly pay. Minority-status supported employees did earn significantly more wages per month, $F(1,835)=17.44$, $p<.0001$ (see Table 3).

Chi-square analysis showed no significant placement-approach differences existed for minority and nonminority supported employees.

Table 2

Within Minority Analyses

Factor	DF	F	p>F
IQ	(2,109)	2.94	0.0571
Age	(2,163	2.22	0.1121
Hours/month	(2,138)	0.31	0.7343
Wages/month	(2,158)	1.78	0.1717
Wages/hour	(2,163)	4.75	0.0098*

*Significant at greater than .01

Table 3

Between Minority and Nonminority Analyses

Factor	DF	F	p>F
IQ	(1,565)	8.57	0.0036*
Age	(1,849)	15.33	0.0001*
Hours/month	(1,835)	2.44	0.1189
Wages/month	(1,835)	17.44	0.0001*
Wages/hour	(1.847)	31.36	0.0001

*Significant at greater than .01

Discussion

The results of this study indicate that some statistically significant differences do exist in employment outcomes and demographic variables between nonminority and minority-status supported employees. Minority-status supported employees were somewhat younger and had higher IQ scores than their nonminority counterparts. Also, minority-status employees' monthly wages were higher. Besides the finding that the Hispanic subgroup earned higher wages per hour than the Asian subgroup, no other significant differences were identified between minority-status subgroups on the variables assessed. No differences were evidenced between nonminority and minority-status and placement approach. Individual and group placements were used with the greatest frequency.

Research in supported employment has examined such topics as factors that contribute to job termination (Lagomarcino, 1990), and economic benefits and costs (Conley, Rusch, McCaughrin, & Tines, 1989). In addition, outcome analyses of supported employment programs in various states have been performed to identify program characteristics and their relative effects across different types of supported employees (Ellis et al., 1990; Kregel et al., 1990; Trach & Rusch, 1989; Vogelsberg, 1990). With the exception of Ellis et al. (1990), who reported race/ethnicity as a demographic characteristic in their analysis of supported employment in Illinois, no study to date has assessed the effects of the supported employment initiative on minority populations. In this respect, the present study extends the literature on supported employment by analyzing the involvement of minority-status individuals in supported employment.

Increasingly, persons with minority-status pose important questions for policymakers. For example, it has been well documented that black students are overrepresented in special education as compared to the prevalence of blacks in the population at large (Maheady, Towne, Algozzine, Mercer, & Ysseldyke, 1983). A 1986 Illinois State Board of Education (ISBE) report indicated that approximately 30% of special education students in Illinois were black. Data from the 1980 U.S. Census estimated that blacks comprised about 15% of the

Illinois population. Therefore, comparison of participation of minority-status individuals in supported employment to population demographics, as a whole, may be misleading.

Although not specifically investigated, the most controversial findings of this study may be the discrepancy between the proportion of minority-status individuals participating in special education as children and supported employment as adults. In light of this apparent discrepancy, research is needed to determine if the employment-related needs of minority-status individuals are being addressed adequately.

Although the results seem promising for minority-status supported employees they must be interpreted with caution. While overall sample size of supported employees in the state of Illinois was acceptable for statistical analysis (N=869), both Hispanic (n=21) and Asian (n=10) subgroups yielded small sample sizes, making comparative interpretation with the black subgroup problematic. The black subgroup, however, is adequate for the purposes of this investigation.

Another concern with interpreting these data is that collection of the information for the sample was restricted to a 12-month period. It is therefore not possible to analyze the long-term effects of minority status on supported employee outcomes (e.g., rate of wage increase, length of job tenure, changes in hours worked per month). Finally, these data are representative only of Illinois, consequently the results of our analysis may not be generalizable to other states. Future research must investigate whether the findings identified in this study generalize to other states and regions of the country. Random samples from larger populations (e.g., national samples) are needed, in particular with respect to low prevalence minority groups to establish the validity of the findings in the current study. Longitudinal and repeated measure studies are also needed to assess the effects of minority status on employment placement and employment-related outcomes over time.

The results of this study indicate that regardless of minority status the majority of supported employees have a primary diagnosis of mild mental retardation. These findings

are consistent with other reports in the literature, i.e., while supported employment has been conceptualized as a service option reserved for persons with severe disabilities, in fact, national statistics indicate that persons with mild disabilities are the most prevalent participants in supported employment (Rusch, Chadsey-Rusch, & Johnson, 1989; Wehman & Melia, 1990). Minority-status individuals had higher IQ scores and were younger than nonminority supported employees. The frequency of placement approach was not effected by minority status; that is, individual and group placements were used with nearly equal frequency in both groups. In general, the employment-related outcomes of hourly wages, hours worked per month, and gross monthly income appear to be equal or superior for minority-status as compared to nonminority supported employees.

Note

This research was funded in part through the Office of Special Education Programs, Office of Special Education and Rehabilitative Services, U.S. Department of Education (contract number 300-85-0160). Additional funding was provided by the Illinois Department of Rehabilitation Services, Governor's Planning Council on Developmental Disabilities, and Illinois Department of Mental Health and Developmental Disabilities (grant number STILMIDOR-GPC-MHD983). Correspondence concerning this manuscript should be addressed to Frank R. Rusch, College of Education, University of Illinois, 110 Education Building, 1310 S. Sixth St., Champaign, IL 61820.

References

Conley, R. W., Rusch, F. R., McCaughrin, W. B., & Tines, J. (1989). Benefits and costs of supported employment: An analysis of the Illinois supported employment project. Journal of Applied Behavior Analysis, 22, 441-448.

Ellis, W., Rusch, F. R., Tu, J., & McCaughrin, W. (1990). Supported employment in Illinois. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 31-44). Sycamore, IL: Sycamore Publishing Company.

Federal Register. (August 14, 1987). The state supported employment services program, 52, 30546-30552.

Johnston, W. B., & Packer, A. H. (1987). Workforce 2000: Work and workers for the 21st century. Indianapolis, IN: Hudson Institute.

Kiernan, W. E., & Bruininks, R. H. (1986). Demographic characteristics. In W. E. Kiernan & J. A. Stark (Eds.), Pathways to employment for adults with developmental disabilities (pp. 21-50). Baltimore: Paul H. Brookes.

Kregel, J., Wehman, P., Revell, W. G., & Hill, M. (1990). Supported employment in Virginia. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 14-30). Sycamore, IL: Sycamore Publishing Company.

Lagomarcino, T. R. (1990). Factors contributing to job separation in supported employment: A multi-level perspective. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 301-316). Sycamore, IL: Sycamore Publishing Company.

Maheady, L., Towne, R., Algozzine, B., Mercer, J., & Ysseldyke, J. (1983). Minority overrepresentation: A case for alternative practice prior to referral. Learning Disability Quarterly, 6, 448-456.

Rusch, F. R. (Ed.). (1990). Supported employment: Models, methods, and issues. Sycamore, IL: Sycamore Publishing Company.

Rusch, F. R., Chadsey-Rusch, J., & Johnson, J. R. (1989). Supported employment: Emerging opportunities for employment integration. In L. Meyer, C. Peck, & L. Brown (Eds.), Critical issues in the lives of the people with severe disabilities. Baltimore: Paul H. Brookes.

Rusch, F. R., & Hughes, C. (1990). Overview of supported employment. Journal of Applied Behavior Analysis, 22, 351-363.

Trach, J. S., & Rusch, F. R. (1989). Supported employment program evaluation: Evaluating degree of implementation and selected outcomes. American Journal on Mental Retardation, 94, 134-139.

Vogelsberg, R. T. (1990). Supported employment in Pennsylvania. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 45-64). Sycamore, IL: Sycamore Publishing Company.

Wehman, P., & Melia, R. (1990). A national analysis of supported employment growth and implementation. Richmond: Rehabilitation Research and Training Center on Supported Employment, Virginia Commonwealth University.

Wehman, P., Moon, M. S., Everson, J. M., Wood, W., & Barcus, J. M. (1989). Transition from school to work: New challenges for youth with severe disabilities. York, PA: The Maple Press Company.

Analysis of Co-worker Involvement in Relation to Level of Disability versus Placement Approach Among Supported Employees

Frank R. Rusch, John R. Johnson, and Carolyn Hughes

The limited success demonstration by sheltered workshops in providing meaningful employment opportunities to persons with handicaps has led to the development of alternative service-delivery models that "support" employment in integrated settings (Bellamy, Rhodes, Bourbeau, & Mank, 1986). Supported employment focuses upon "competitive work in an integrated work setting for individuals who, because of their handicaps, need on-going support services to perform that work" (Federal Register, August 14, 1987, p. 30546). Supported employment also provides opportunities for persons with handicaps to interact with nonhandicapped employees. In fact, employment integration may be the distinguishing characteristic of supported employment (Chadsey-Rusch, 1986). However, except for research reported by Chadsey-Rusch and Gonzalez (1988), we know very little about social interactions that occur between employees with and without handicaps. These authors suggested that employees with handicaps interact with co-workers and that the purpose of these interactions is to share information, tease and joke with others, and ask questions.

Because of their consistent presence in the work environment, co-workers have been identified as a potentially powerful resource available to provide support to supported employees (Rusch, 1986; Rusch, Hughes, Johnson, & Minch, 1988; Rusch & Minch, 1988; Shafer, 1986). Only recently, however, has this support been recognized as potentially important to long-term employment. Lagomarcino and Rusch (1988) and Rusch and Minch (1988) overviewed several studies that reported ways in which co-workers served as change agents. For example, Rusch and Menchetti (1981) taught co-workers to deliver a verbal warning to a food service employee with moderate mental retardation who was failing to

comply to requests made by supervisors, co-workers, and cooks. Co-workers also were taught to report the results of the intervention to follow-up support staff. The warnings positively affected the performance of the supported employee. Based on their analysis of both business management and sociology of work literature, Nisbet and Hagner (1988) observed that considerable social interaction and support among co-workers are characteristic of natural work environments. These researchers concluded that promoting co-worker involvement may be one means of providing consistent, on-going follow-up services in integrated work settings.

Rusch, Hughes, McNair, and Wilson (1989) define co-workers as employees who meet one or more of the following criteria: (a) work in the proximity of the supported employee, (b) perform the same or similar duties as the supported employee, and/or (c) take breaks or eat meals in the same area as the supported employee. Rusch and Minch (1988) identified five types of co-worker support that have been reported by applied researchers who have enlisted the involvement of co-workers. This involvement included: (a) validating instructional strategies (Rusch & Menchetti, 1981; Schutz, Rusch, & Lamson, 1979), (b) collecting subjective evaluations (Crouch, Rusch, & Karlan, 1984; Schutz, Jostes, Rusch, & Lamson, 1979; White & Rusch, 1983), (c) implementing training procedures (Kochany, Simpson, Hill, & Wehman, 1982; Rusch, Weithers, Menchetti, & Schutz, 1980; Stanford & Wehman, 1982), (d) collecting social comparison information (Crouch et al., 1984; Rusch, Morgan, Martin, Riva, & Agran, 1985), and (e) maintaining work performance after skill acquisition (Kochany et al., 1981; Rusch et al., 1985).

The primary purpose of this study was to extend the findings of Rusch et al. (1988) by describing co-worker involvement in relation to level of disability versus placement approach. Specifically, this study sought to describe the type and level of co-worker involvement being reported by employment specialists who place their supported employees individually, in groups (i.e., clustered), or in mobile work crews. Additionally, the relation of level of disability to type of placement was investigated. Rusch et al. (1988)

indicated that the greatest percentage of supported employees had co-workers who served as associates (87%), followed by evaluators (70%), trainers (61%), advocates (42%), friends (20%), and data collectors (17%). However, their findings did not consider whether involvement would vary as a function of level of disability and placement approach.

Methods

Sample Derivation

The sample for this study included 264 supported employees served by community rehabilitation facilities implementing supported employment projects throughout the state of Illinois. Persons were selected for inclusion in the sample on the basis of the following criteria:

1. Persons were selected who were reported to experience mental retardation as a primary disability as reported by agencies on the basis of the most current psychological evaluation and/or other enrollment information collected by each agency. Classification of disability included four levels of mental retardation (i.e., mild, moderate, severe, profound) based on the American Association on Mental Retardation's classification (Grossman, 1983).
2. Complete data were available on co-worker involvement during the months of August 1987 through December 1987 although not necessarily for all five months (see section on Data Collection for description of co-worker data).
3. All persons were served by a supported employment program funded by the Illinois Department of Rehabilitation Services, the Illinois Department of Mental Health and Developmental Disabilities, and/or the Illinois Governor's Planning Council on Developmental Disabilities.

Data were obtained for the month of September, 1987—the month in which complete data were reported for the greatest number of employees. In that month, employment programs served a total of 333 persons. Of that number, important descriptive data were missing on 15 persons, and an additional 54 persons were reported as having primary

disabilities other than mental retardation. The final sample employed for this study, therefore, was 264 persons. Table 1 displays the characteristics of the sample selected for consideration.

Data Collection

Every month beginning July, 1987, all participating rehabilitation agencies received a Co-worker Involvement Reporting Form from the University of Illinois, instructions for completing the form, and a stamped return envelope (form available upon request from first author). Ten days after the suggested return date, a participating agency would receive a telephone call if its forms were not received or were filled out incompletely. Returned forms were entered into a dBase file by trained computer programmers.

Instructions accompanying the Co-worker Involvement Reporting Forms requested that the employment specialist primarily responsible for providing post-placement, long-term follow-up complete the form. All employment specialists participating in the Illinois Supported Employment Project attended a total of three two-day workshops beginning in the spring and summer of 1987, in which they were trained to collect data concerning co-worker involvement using direct observation (and verbal report, when assessing the occurrence of befriending). Additionally, all employment specialists were provided at least two on-site visits beginning in the fall of 1985 which included technical assistance in data collection by technical assistance and program evaluation staff members of the University of Illinois. During the workshops and the scheduled site visits, employment specialists were given information and provided with opportunities to ask questions about the data collection requirements of the three funding agencies.

The Co-worker Involvement Reporting Form was completed monthly for each supported employee and consisted of two sections. The first section assessed employment specialist hours involved in supported employment activities provided to the supported employee. The second section consisted of six items concerning co-worker involvement. These items required the employment specialist to evaluate the occurrence or

Table 1

Characteristics of Supported Employees (N=264)

	Supported Employment Placement			
	Individual	Clustered	Mobile Crew	TOTAL
Mild Mental Retardation				
N	81	62	17	160
% of Sample	30.7	23.5	6.4	60.6
Row percentage	50.6	38.8	10.6	
Column percentage	68.6	50.4	73.9	
Moderate Mental Retardation				
N	31	42	5	78
% of Sample	11.7	15.9	1.9	29.6
Row percentage	39.7	53.9	6.4	
Column percentage	26.3	34.2	21.7	
Severe/Profound Mental Retardation				
N	6	19	1	26
% of Sample	2.3	7.2	.4	9.9
Row percentage	23.1	73.1	3.8	
Column percentage	5.1	15.5	4.4	
TOTAL				
N	118	123	23	264
%	44.7	46.6	8.7	100

Gender	n	%
Female	101	38
Male	163	62

Ethnicity	n	%
Asian	1	0.4
Black	35	13
Hispanic	9	3
White	219	83

Mean Age = 32 (SD=9.9)

Mean IQ = 57.7 (SD=13.2)

nonoccurrence of types of co-worker involvement provided to the supported employee (i.e., training, associating, befriending, advocating, collecting data, evaluating). Table 2 provides definitions used by agencies for reporting type of co-worker involvement and type of supported employment placement.

Analysis

Categorical modeling procedures (Bishop, Fienberg, & Holland, 1975; Grizzle, Starmer, & Koch, 1969; Kritzer, 1979) were employed to test hypotheses that response probabilities within each category of social involvement, and across all categories of social involvement as a whole, were the same for all groups, regardless of level of disability or employment placement type. Such an approach allows the evaluation of "main effects" (i.e., the relationship between level of disability and frequency of social interaction; the relationship between type of placement and frequency of social interaction) and "interaction effects" (i.e., the joint relationship between level of disability, type of placement, and frequency of social interaction). In addition, the categorical modeling approach employed in this study yields an "intercept" value, which indicates an overall estimate of the significance of the tabled distribution. The SAS "CATMOD" procedure was employed in all inferential analyses (SAS Institute, 1985). To make the results of the analyses more intuitively understandable, simple descriptive data and charts were also prepared.

Results

Table 3 provides the number and percentage of persons for whom each type of co-worker involvement has been reported as occurring/not occurring. In addition, Table 3 also provides a breakdown of the percentage of individuals for whom co-worker involvement had occurred by disability, type of placement, and type of co-worker involvement. The results are categorized as associating, befriending, advocating, training, data collection, and evaluation.

Table 2

Types of Co-worker Involvement and Supported Employment Placement

Co-worker Involvement
Advocating - Co-worker advocates for target employees by optimizing, backing, and supporting the target employee's employment status. Optimizing refers to encouraging a supervisor to assign high-status and relevant tasks to the target employee, backing refers to supporting target employee's rights, for example, by attempting to prevent practical jokes aimed at the target employee. It also includes speaking up for the target employee or offering explanations during differences of opinion. Supporting relates to providing emotional support to the target employee in the form of friendship, association, etc.
Associating - Co-worker interacts socially with the target employee at the work place.
Befriending - The co-worker interacts socially with target employee outside of the workplace.
Collecting Data - Co-worker collects data by observing and recording social and/or work performance.
Evaluating - A co-worker appraises a target employee's work performance and provides (written/oral) feedback to him/her.
Training - The co-worker supports a target employee by providing on-the-job skill training.
Supported Employment Placement
Individual Placement - Placement of an individual into competitive employment, typically without the presence of other workers with disabilities who perform the same job (e.g., dishwasher who works in a restaurant, janitor who works in a state office building).
Clustered Placement - Situation where two or more supported employees work for single employer typically performing similar job duties.
Mobile Crew - Situation where several supported employees work together and perform the same type of job at various community work sites (e.g., a janitorial work crew).

Note. From Co-worker Involvement Scoring Manual and Index by F. R. Rusch, C. Hughes, J. McNair, and P. G. Wilson, 1989, Champaign: University of Illinois. Adapted by permission.

Table 3

Percentage of Supported Employees Experiencing Co-worker Involvement by Type of Co-worker Involvement Disability, and Supported Employment Placement (N=264)

	Mild		Moderate		Severe	
	N	%a	N	%	N	%
Associating						
Individual	68	84	27	87	5	83
Cluster	52	84	36	86	17	89
Mobile Crew	12	71	1	20	-	-
Befriending						
Individual	23	28	11	35	1	17
Cluster	14	23	14	33	1	5
Mobile Crew	-	-	1	20	-	-
Advocating						
Individual	43	53	18	58	1	17
Cluster	23	37	12	29	1	5
Mobile Crew	2	12	1	20	-	-
Training						
Individual	57	70	21	68	4	67
Cluster	25	40	23	55	2	11
Mobile Crew	4	24	1	20	1	100
Data Collecting						
Individual	19	23	4	13	-	-
Cluster	7	11	4	10	-	-
Mobile Crew	1	6	-	-	-	-
Evaluating						
Individual	49	60	19	61	4	67
Cluster	27	44	29	69	10	53
Mobile Crew	7	41	2	40	-	-

[a]Percentage represents the percent of the number of workers experiencing the disability indicated that were also employed in the type of supported employment placement indicated for whom co-worker involvement of the type indicated was reported to have occurred. (For example, of 78 persons in the sample experiencing moderate mental retardation, 31 were employed in individual placements [see Table 1] and of this number, 18 (58%) experienced co-worker involvement in the form of advocating.) N is the number of persons reported to have experienced co-worker involvement.

Table 4 indicates the results of the seven linear model analyses conducted to test the hypothesis of homogeneity of response probabilities. Each analysis reflected in Table 4 represents results from a saturated model that includes all sources of nondependent variation. The first analysis of variance table was a complete saturated model to determine whether or not a significant difference between occurrence and nonoccurrence of co-worker involvement was reflected in the data without regard for type of co-worker involvement (i.e., occurrence was scored for any given supported employee for any type of co-worker involvement). As the results indicate, the intercept reflects a highly significant difference within the data primarily because of the type of supported employment placement. Because the levels of the factor of type of co-worker involvement were dependent, this factor was not included in the complete model. However, Table 4 also provides the results for saturated models developed for each type of co-worker involvement. The only nonsignificant effects indicated were for the disability by placement interaction for befriending and advocating, and the disability main effects for training and evaluation. In short, the extremely high chi-square values for the intercept clearly indicate a highly significant difference between the frequency of occurrence and nonoccurrence of each type of co-worker involvement. In addition, significant differences with respect to disability and type of supported employment placement were clearly indicated for all types of co-worker involvement except training and evaluation. In the case of training and evaluation, only placement and the interaction between disability and placement resulted in statistically significant differences.

Table 3 is most instructive for the interpretation of the results by Table 4. Some general observations are very interesting. First of all, associating with nondisabled co-workers was reported more often than any other type of co-worker involvement. Conversely, 0-35% of supported employees (by level of disability and placement type) appeared to be befriended by nondisabled co-workers or to have had supervisory involvement in the form of data

Table 4

Results of Linear Analysis of the Frequency of Co-worker Involvement

Complete Saturated Model

Source	df	X^2	p
Intercept	1	782.14	.0001
Disability (D)	2	3.38	.1846
Placement (P)	2	21.72	.0001
D x P	4	2.64	.6197
Residual	0	0.00	1.0000

Saturated Models of Social Involvement Categories

		Associating		Befriending		Advocating	
Source	df	X^2	p	X^2	p	X^2	p
Intercept	1	105.78	.0001	718.30	.0001	536.56	.0001
Disability (D)	2	10.69	.0048	6.43	.0401	18.33	.0001
Placement (P)	2	54.11	.0001	6.10	.0473	13.22	.0013
D x P	4	32.06	.0001	6.78	.1479	4.53	.3386
Residual	0	0.00	1.0000	0.00	1.0000	0.00	1.0000

Saturated Models of Supervisory Involvement Categories

		Training		Data Collection		Evaluation	
Source	df	X^2	p	X^2	p	X^2	p
Intercept	1	191.20	.0001	5440.21	.0001	163.70	.0001
Disability (D)	2	3.15	.2070	31.16	.0001	2.36	.3069
Placement (P)	2	16.39	.0003	10.33	.0057	11.56	.0031
D x P	4	84.20	.0001	14.44	.0060	11.92	.0180
Residual	0	0.00	1.0000	0.00	1.0000	0.00	1.0000

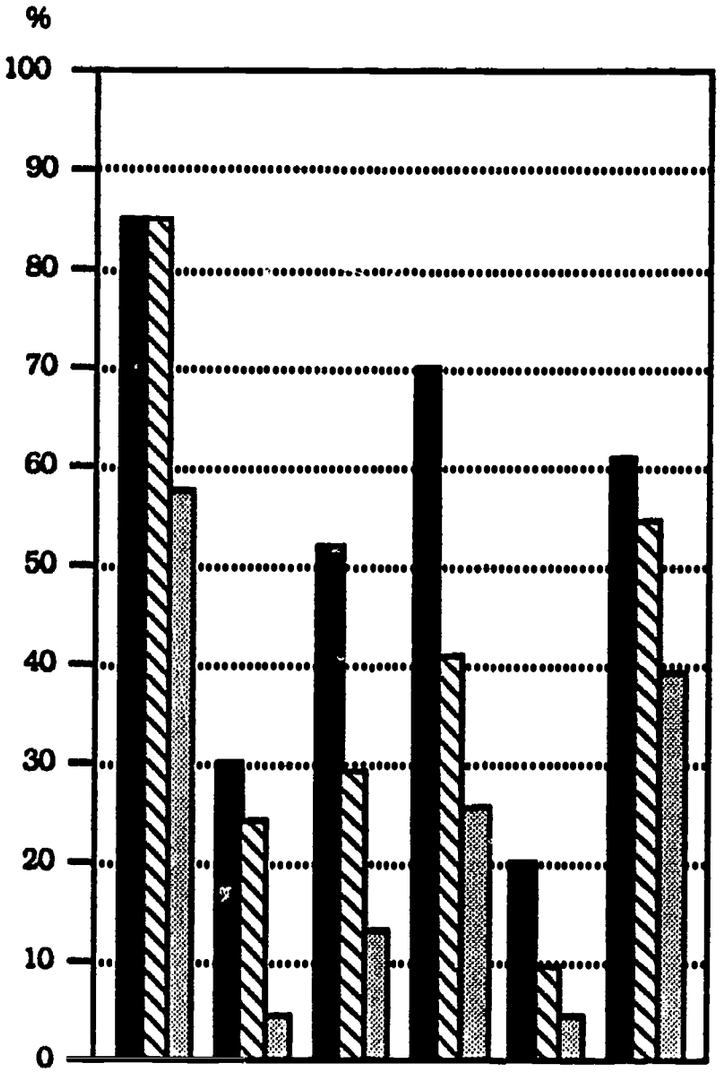
collection. Figure 1 shows the relationship between type of supported employment placement and the percentage of persons for whom co-worker involvement was reported to have occurred. Figure 2 reports the percentage of individuals with each type of primary disability who experienced each type of co-worker involvement. These graphs reflect that, regardless of disability, supported employees working in individual placements represented the largest proportion of individuals experiencing co-worker involvement. Conversely, a low percentage of persons working in mobile crews had experienced co-worker involvement. Although disability was a factor related to the frequency of co-worker involvement, it seems that individuals experiencing the most severe disabilities (n=26) tended to have fewer opportunities for co-worker involvement in the form of befriending, advocating, and data collection than other supported employees.

Type of Co-worker Involvement

Regardless of disability, co-workers were reported to have associated with the majority of supported employees working in individual and clustered supported employment situations. In contrast, the number of persons with mild mental retardation working in mobile crew situations who experienced associating with co-workers decreased by 10%, and only one person with moderate or severe/profound mental retardation working in mobile crews had experienced associating with nondisabled co-workers. However, as Table 1 indicates, there were only six persons with moderate and severe/profound mental retardation employed with mobile crews.

In stark contrast to associating, fewer than half of all persons had experienced befriending by nondisabled co-workers regardless of disability or type of supported employment placement. Also, only one person out of a total of 23 persons working in mobile crews was reported to have been befriended by a co-worker.

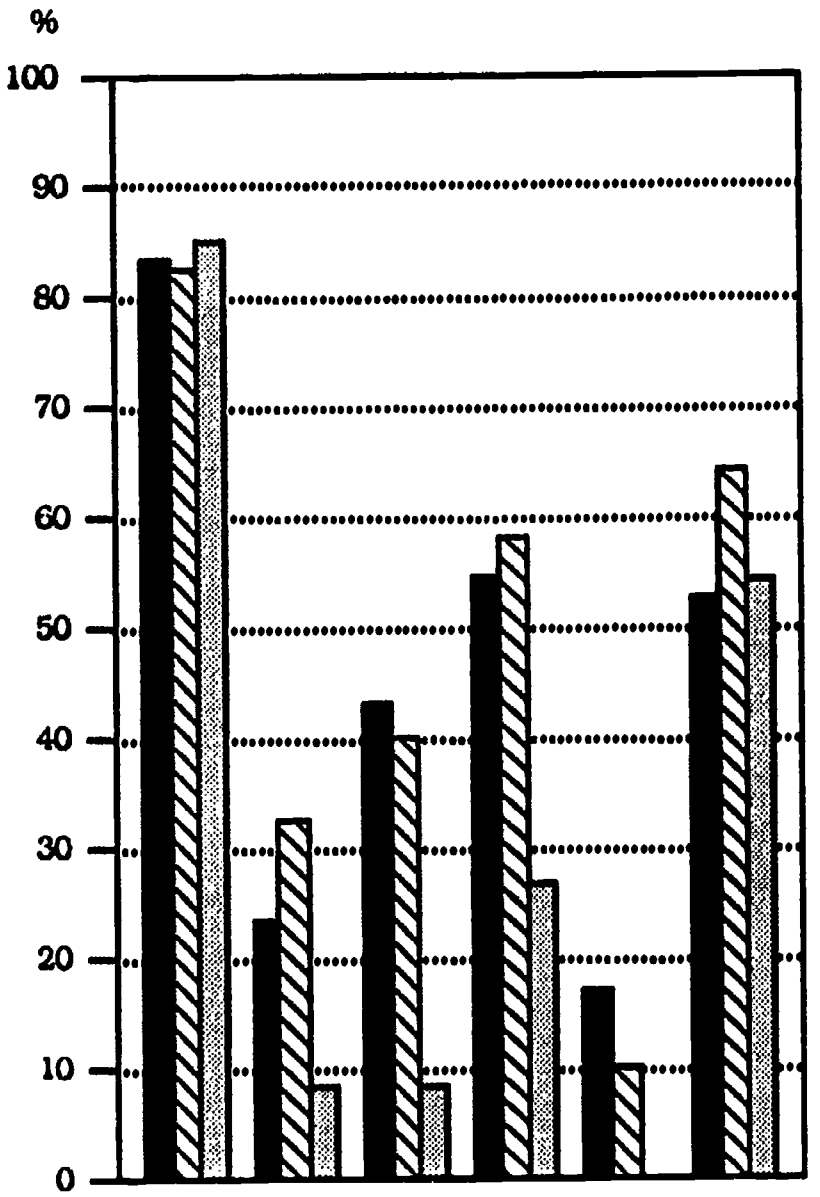
The number of persons who experienced advocating seemed to be affected by both disability and placement. The probability of nondisabled co-workers acting as advocates seemed to decrease as the severity of primary disability increased. In addition, as the type of



	ASC	BEF	ADV	TRN	DC	EVL	n
Individual	85%	30%	52%	70%	20%	61%	118
Clustered	85%	24%	29%	41%	9%	54%	123
Mobile Crew	57%	4%	13%	26%	4%	39%	23

ASC = Associating BEF = Befriending ADV = Advocating
TRN = Training DC = Data Collection EVL = Evaluating

Figure 1. Percentage of Supported Employees Experiencing Co-worker Involvement by Type of Placement



		ASC	BEF	ADV	TRN	DC	EVL	n
Mild	■	83%	23%	43%	54%	17%	52%	160
Moderate	▨	82%	33%	40%	58%	10%	64%	78
Severe	□	85%	8%	8%	27%	0%	54%	26

ASC = Associating BEF = Befriending ADV = Advocating
TRN = Training DC = Data Collection EVL = Evaluating

Figure 2. Percentage of Workers Experiencing Co-worker Involvement by Disability

supported employment placement became more group oriented, the probability of co-workers acting as advocates also decreased.

Our results indicate that individuals working in individual placements had more opportunity to receive training from nondisabled co-workers than persons working in either clustered or mobile crew situations. In addition, it is again clear that, in general, persons in mobile crews had a lower probability of experiencing training from co-workers than their peers working in individual or clustered placements.

Data collection by co-workers was reported for only 35 (13%) of the supported employees. For the most part, persons working in individual and clustered placements tended to be evaluated by co-workers more than did individuals working in mobile crews. Again, persons working in individual placements tended to experience more co-worker evaluation than their peers working in other types of employment situations.

Discussion

Recently, supported employment has emerged as a major employment alternative for persons with handicaps. This employment alternative is characterized by the supported employee earning a wage in a nonsheltered work setting, with support being provided to the supported employee. Research conducted in nonsheltered settings suggests that support may be provided by co-workers (cf. Rusch & Minch, 1988), as well as by employment specialists (Renzaglia, 1986).

The results of this investigation support a growing literature that suggests supported employees are involved with nonhandicapped co-workers. Indeed, naturally occurring co-worker support has been found to be typical of work environments in general (Nisbet & Hagner, 1988). Our research suggests that co-workers associate with supported employees during the work day and that these same co-workers assume evaluation and training responsibilities. Additionally, co-workers appear to associate, evaluate, and train the supported employee more often when the employee has mild mental retardation versus severe mental retardation. This finding may be the result of the type of training that is

provided to supported employees. Johnson and Rusch (in press) found that employment specialists depend significantly more time training supported employees with severe handicaps on the job because the type of training needed exceeds the instructional capabilities of most co-workers.

The findings of this study also suggest that type of placement results in significantly different levels of co-worker involvement. We found that supported employees who were employed in mobile work crews were much less involved with co-workers. Supported employees who were individually placed or who worked in clustered placements were more involved with co-workers. These findings are not surprising. Typically, mobile work crews consist of eight or fewer supported employees performing subcontract work. These employees are often transported by a company van to different settings to perform janitorial or maintenance jobs, and these jobs are usually performed when the contracting agency is not open to the public. For example, a mobile work crew may clean a bank after the nonhandicapped co-workers have worked their shifts.

Employment integration has been defined as the participation of employees with and without disabilities as equal members within a workplace (Hughes, Rusch, & Curl, 1990). Because a lack of employment integration is typical of mobile work crews, it may be that the limited opportunity for co-worker support makes these placements inappropriate for supported employment. One defining feature of supported employment is employment integration. Without the opportunity to interact with nondisabled co-workers in the workplace, employees with disabilities are limited in the likelihood of their participating as an equal member of the work force.

In addition, the present study suggests that while nondisabled co-workers are associating with supported employees, they rarely invite these employees to worship, drink, bowl, or share other activities away from the work site. Clearly, the results of this study suggest that if supported employees are not making friends, then efforts must be made to influence potential befriending. What should be emphasized is the need for supported employment

professionals to develop and implement systematic and natural means of facilitating interactions between nondisabled co-workers and supported employees.

The results of befriending may also have some important implications for job tenure and job separation. Typically, employment offers employees opportunities for developing social relationships and opportunities for engaging in activities that are a function of pursuing social relationships. We suspect that there may be a relationship between the amount of befriending that occurs on a job and job separation. However, these factors were not considered for the present study.

While we tracked the number of supported employees for whom nondisabled co-workers collected data and conducted evaluations, we were not surprised to see that data collection was infrequently reported. It is also probably not in the best interests of promoting social integration of supported employees for nondisabled co-workers to function as trainers, data collectors, or evaluators unless their job description calls for such responsibilities for all designated employees regardless of disability. Menchetti, Rusch, and Lamson (1981) found that certain supervisors objected to data collection procedures that required the use of equipment such as clip boards or stop watches.

There are several limitations of the present study that must be kept in mind. The most important limitation concerns the overall reliability of the data collected. No efforts were made to determine the extent to which employment specialists agreed with one another or themselves over time. Since the completion of this investigation, however, Rusch, Hughes, McNair, and Wilson (1989) have developed a psychometrically valid Co-worker Involvement Index which will be used in future research that explores co-worker involvement. Preliminary studies conducted by McNair (1989), utilizing the Co-worker Involvement Index, suggest very similar co-worker involvement patterns.

Additionally, this study did not consider factors such as the hours each supported employee worked, the number of non disabled co-workers employed, and the percentage of supported employees' working hours that employment specialists are engaged in training,

observation, and/or supervision. These factors will almost certainly affect the opportunities that nondisabled co-workers have to engage in some type of interaction with supported employees.

In summary, this study extends the findings reported by Rusch et al. (1988) by describing co-worker involvement with supported employees in relation to level of disability versus placement approach. Our findings point to the possibility that nondisabled co-workers do assume significant relationships with supported employees, unless these supported employees are members of mobile work crews. Clearly, our findings indicate that type of supported employment placement is the single most powerful measure of the number of persons for whom co-worker involvement had occurred. Future research must begin to focus more on the frequency, duration, quality, and type of interactions occurring between nondisabled employees and supported employees. Our measures of co-worker involvement are still a fairly coarse attempt at evaluating the quality of interaction that occurs within a work site.

Additionally, research is needed to study the relationships that result from continued employment of supported employees and whether these relationships change as a result of extended employment. This investigation is one in a series of studies the University of Illinois is undertaking to better understand employment outcomes as a result of supported employment. Future research will address whether early patterns of co-worker involvement predict future patterns. We are hopeful that extended supported employment results in significant changes in the quality of employees' lives, including the formation of friendships.

References

Bellamy, G. T., Rhodes, L. E., Bourbeau, P. E., & Mank, D. M. (1986). Mental retardation services in sheltered workshops and day activity programs: Consumer benefits and policy alternatives. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 257-271). Baltimore: Paul H. Brookes.

Bishop, Y. M. M., Fienberg, S. E., & Holland, P. W. (1975). Discrete multivariate analysis: Theory and practice. Cambridge, MA: The MIT Press.

Chadsey-Rusch, J. (1986). Identifying and teaching valued social behaviors in competitive employment settings. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 273-287). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J., & Gonzalez, P. (1988). Social ecology of the workplace: Employers' perceptions versus direct observation. Research in Developmental Disabilities, 9, 229-245.

Crouch, K. P., Rusch, F. R., & Karlan, G. P. (1984). Competitive employment: Utilizing the correspondence training paradigm to enhance productivity. Education and Training of the Mentally Retarded, 19, 268-275.

Federal Register. (August 14, 1987). The State Supported Employment Services Program, 52(157), 30546-30552.

Freeman, D. H. (1987). Applied categorical data analysis. New York: Marcel Dekker, Inc.

Grizzle, J. E., Starmer, C. F., & Koch, G. G. (1969). Analysis of categorical data by linear models. Biometrics, 25, 489-504.

Grossman, H. J. (Ed.). (1983). Classification in mental retardation. Washington, DC: American Association on Mental Deficiency.

Hughes, C., Rusch, F. R., & Curl, R. (1990). Extending individual competence, developing natural support, and promoting social acceptance. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues. Sycamore, IL: Sycamore Publishing Company.

Johnson, J. R., & Rusch, F. R. (in press). Analysis of direct training hours received by supported employment consumers. American Journal on Mental Retardation.

Kochany, L., Simpson, T., Hill, J., & Wehman, P. (1982). Reducing noncompliance and inappropriate verbal behavior in a moderately retarded food service worker: Use of a systematic fading procedure. In P. Wehman & M. Hill (Eds.), Vocational training and job placement of severely disabled persons (pp. 128-139). Richmond: School of Education, Virginia Commonwealth University.

Kritzer, H. (1979). Approaches to the analysis of complex contingency tables: A guide for the perplexed. Sociological Methods and Research, 7, 305-329.

Lagomarcino, T. R., & Rusch, F. R. (1988). Competitive employment: Overview and analysis of research focus. In V. B. Van Hasselt, P. S. Strain, & M. Hersen (Eds.), Handbook of developmental and physical disabilities (pp. 150-158). New York: Pergamon Press.

McNair, J. (1989). Co-worker involvement in supported employment program. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.

Menchetti, B. M., Rusch, F. R., & Lamson, D. S. (1981). Social validation of behavioral training techniques: Assessing the normalizing qualities of competitive employment training procedures. Journal of the Association for the Severely Handicapped, 6, 6-16.

Nisbet, J., & Hagner, D. (1988). Natural supports in the workplace: A reexamination of supported employment. Journal of the Association for Persons with Severe Handicaps, 13, 260-267.

Renzaglia, A. (1986). Preparing personnel to support and guide emerging contemporary services alternatives. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 303-316). Baltimore: Paul H. Brookes.

Rusch, F. R. (1986). Developing a long-term follow-up program. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 225-232). Baltimore: Paul H. Brookes.

Rusch, F. R., Hughes, C., Johnson, J. R., & Minch, K. E. (1988). A descriptive analysis of co-worker involvement in supported employment. Manuscript submitted for publication.

Rusch, F. R., Hughes, C., McNair, J., & Wilson, P. G. (1989). Co-worker involvement scoring manual and index. Champaign: The Board of Trustees of the University of Illinois.

Rusch, F. R., & Menchetti, B. M. (1981). Increasing compliant work behaviors in a non-sheltered work setting. Mental Retardation, 19, 107-111.

Rusch, F. R., & Minch, K. E. (1988). Identification of co-worker involvement in supported employment: A review and analysis. Research in Developmental Disabilities, 9, 247-254.

Rusch, F. R., Morgan, T. K., Martin, J. E., Riva, M., & Agran, M. (1985). Competitive employment: Teaching mentally retarded employees self-instructional strategies. Applied Research in Mental Retardation, 6, 389-407.

Rusch, F. R., Weithers, J. A., Menchetti, B. M., & Schutz, R. P. (1980). Social validation of a program to reduce topic repetition in a non-sheltered setting. Education and Training of the Mentally Retarded, 15, 208-215.

SAS Institute, Inc. (1985). SAS user's guide: Basics, version 5 edition and Statistics, version 5 edition. Cary, NC: Author.

Schutz, R. P., Jostes, K. F., Rusch, F. R., & Lamson, D. S. (1980). Acquisition, transfer, and social validation of two vocational skills in a competitive employment setting. Education and Training of the Mentally Retarded, 15, 306-311.

Schutz, R. P., Rusch, F. R., & Lamson, D. S. (1979). Eliminating unacceptable behavior: Evaluation of an employer's procedures to eliminate unacceptable behavior on the job. Community Service Forum, 1, 5-6.

Shafer, M. S. (1986). Utilizing co-workers as change agents. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 215-224). Baltimore: Paul H. Brookes.

Stanford, K., & Wehman, P. (1982). In P. Wehman & M. Hill (Eds.), Vocational training and job placement of severely disabled persons (pp. 141-159). Richmond: School of Education, Virginia Commonwealth University.

White, D. M., & Rusch, F. R. (1983). Social validation in competitive employment: Evaluating work performance. Mental Retardation, 4, 343-354.

Toward a Definition of Social Skills: Implications for Adults with Mental Retardation in Employment Settings

Janis Chadsey-Rusch

To secure and maintain employment, individuals with mental retardation must exhibit behaviors that are valued and considered appropriate in employment settings. Two major behavioral categories for ensuring employment success include production skills performed at some acceptable criterion and effective social skills. Without adequate skills in these areas, individuals with mental retardation are likely to encounter difficulties finding and maintaining a job. Although both production and social skills are necessary for job survival (Rusch, 1979), there is ample evidence to suggest that a major reason for job loss for persons with mental retardation may be their lack of appropriate social skills (Brickey, Campbell, & Browning, 1985; Ford, Dineen, & Hall, 1984; Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986; Hill, Wehman, Hill & Goodall, 1986; Kochany & Keller, 1981; Martin, Rusch, Lagomarcino, & Chadsey-Rusch, 1986; Wehman et al., 1982).

In work settings, two general classes of social interactions occur—task-related and non-task-related interactions (Chadsey-Rusch, Gonzalez, Tines, & Johnson, in press; Kirmeyer, 1988; Lignugaris/Kraft, Salzberg, Rule, & Stowitschek, 1988). Task-related interactions are those interactions related to work or work tasks and include such behaviors as following directions, requesting assistance, sharing work information, and accepting criticism (Chadsey-Rusch et al., in press; Lignugaris/Kraft et al., 1988). Employers believe that task-related interactions are crucial to employment success and are more important than non-task-related interactions (Rusch, Schutz, & Agran, 1982; Salzberg, Agran, & Lignugaris/Kraft, 1986).

Non-task-related interactions, or interactions unrelated to work or work tasks, include such behaviors as teasing or joking, sharing information about sports, or asking questions about a co-worker's family (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft et al., 1988). Although these interactions may not be viewed as crucial by employers, it is possible that they may contribute toward the formation of friendships, social support, and satisfaction on the job (Chadsey-Rusch, 1990; House, 1981; Klein & D'Aunno, 1986; Pogrebin, 1987).

Although it is clear that effective social skills are related to job success, and possibly social support, little agreement has been reached on how to define, measure, assess, and teach social skills. Probably the primary reason for this lack of consensus stems from the difficulty of operationally defining social skills (Chadsey-Rusch, 1986). For example, the socially skilled individual has been described as someone who easily interacts with others, is a good conversationalist, can communicate and elicit information, and leaves others with a positive feeling after the interaction (Kelly, 1982). Alternatively, Ladd and Mize (1983) defined the socially skilled person as one with the "ability to organize cognitions and behaviors into an integrated cause of action directed toward culturally acceptable social or interpersonal goals" (p. 127). Although these descriptions seem intuitively accurate, they really are too broad to lend themselves easily to curricular and instructional components.

The purpose of this paper is to propose a definition of social skills that will begin to operationalize the components that need to be considered when teaching social skills to individuals in employment settings. Clearly, it is difficult to extract a cohesive definition that adequately captures such a complex part of life, yet it makes sense to try and know what something is before one attempts to teach it. In addition to the presentation of a definition, current approaches to teaching social skills in employment settings will be reviewed and analyzed with respect to the definition proposed in this paper.

A Definition of Social Skills

Social skills are very complex because they are composed of multiple components. In 1983, Cartledge and Milburn described several of the elements that seemed to be present in

most definitions of social skills; these elements can be combined to form a comprehensive definition. This definition, which consists of four parts and is presented in Table 1, is discussed in relationship to how it might be manifested in employment settings.

Table 1

Components of Social Skills Definition

1. Social skills are rule-governed learned behaviors that elicit positive or neutral responses.
2. Social skills are instrumental, goal-directed behaviors.
3. Social skills are situation specific and vary according to social context.
4. Social skills involve both specific observable and nonobservable cognitive and affective elements.

Social Skills are Rule-governed Learned Behaviors that Elicit Positive or Neutral Responses

Successful social skills can be viewed as socially acceptable learned behaviors that enable an individual to interact with others in ways that elicit positive or neutral responses and assist in avoiding negative responses from others. This part of the definition implies that there are acceptable and nonacceptable social skills, that social skills are learned, and that success in using these skills is judged by others.

There are social rules to our interactions which dictate acceptable and nonacceptable behavior. From a pragmatic perspective, knowledge and skillful use of these rules enable an individual to know "when to speak, when not, and what to talk about, with whom, when, where, in what manner" (Hymes, 1972, p. 277). For example, when workers have conversations with their co-workers, most know to listen and not to speak until there is a pause in the conversation—that is, they take turns talking. As another example, many

workers know that when they meet a new co-worker for the first time, they should not ask private questions, such as "How much do you weigh?" or "How much money do you make working here?" Even though they may be hard to define, there are rules to our social behavior, and most people would recognize and agree upon these rules (McFall, 1982). The rules that surround particular social interactions dictate acceptable and nonacceptable behavior and need to be taught to socially unskilled individuals.

Social skills are learned. The best evidence we have for knowing that these skills are learned is to compare the social skills used by individuals in different countries. For example, workers from Japan are likely to be more formal in their interactions with one another than workers in the United States (Schein, 1981). These social conventions or rules are likely shaped by parents and societies in general. If we know that social skills are learned, then it logically follows that social skills can be taught, which is good news for workers who display nonacceptable behaviors.

Social skills are judged by others, and it is probable that we are judged as being either socially competent or incompetent (McFall, 1982). If our social skills are judged as competent, we will likely receive positive responses, or at least avoid receiving negative responses from others. The unfortunate thing about having our social skills judged by others is that this judgment is subject to error and bias. Such factors as the personal characteristics of the judge and the person being judged (e.g., age, sex, experience) may influence the type of judgment made (McFall, 1982). Additionally, a worker may be judged as being socially competent during a work period, but be judged as incompetent during lunch. It may be important for individuals to recognize that judgments of their social performance may vary, depending upon the skill they are trying to display, the context they are in, and the person who is doing the judging.

Social Skills Are Instrumental, Goal-Directed Behaviors

Social skills are used for a reason—we exhibit social behaviors in order to affect others and the impact we have will influence future interactions. Social skills are used to achieve

certain goals or purposes. For example, questions may be used by employees at work in order to find out information that is related to completing a specific job task. A worker may tell a joke in order to draw positive attention to himself/herself. A work direction might be followed in order to avoid criticism. Social skills are used to meet goals, and these goals are determined by the individual. If engaging in a specific social skill results in a goal being met, then the same social skill will probably be used in future interactions. It is important for workers to understand that their social behaviors can affect environmental and personal change.

Social Skills Are Situation Specific and Vary According to Social Context

The types of social skills that are exhibited by individuals will vary, depending upon the physical setting, the people in the setting, and the social context or occasion for the interaction. Physical setting exerts direct influence on social skills. For example, consider the effect that a fitness center and a library have on social skills. At a fitness center, an employee may talk loudly when instructing a racquet-ball player, but if the same type of behaviors were exhibited by a library employee, patrons and other librarians would quickly give negative feedback. According to McFall (1982), setting accounts for a major portion of the variance found in judgments of social performance.

The social occasion associated with interactions can also influence the type of social skills demonstrated, and social occasions can be different from physical settings; that is, two social occasions can occur in the same physical setting but have a differential influence on the types of behaviors exhibited. For example, a funeral and a party can both be held in a work setting (e.g., church), but individuals at funerals appear sad and subdued, while individuals at parties are more likely to appear happy and gay. Various social occasions influence the types of social skills that are exhibited.

Skills also vary depending upon the individuals involved in the interaction. For example, the types of social skills used with co-workers may be very different from the skills used with the boss. Workers would probably feel comfortable asking a close friend private

questions, but would not feel comfortable asking a casual acquaintance the same type of questions. The skills used with others will likely vary depending on the age, sex, prior interactions, and relationship experienced with others. As with the other components, workers must be taught that social skills vary depending upon the physical setting, the people in the setting, and the social context or occasion for the setting.

Social Skills Involve Both Specific Observable and Nonobservable Cognitive and Affective Elements

The last component of this definition states that the specific behaviors used to exhibit social skills are both observable and nonobservable, that these behaviors are influenced by the form of communication and the affect used, and that the ability to make fine discriminations and solve problems influences the judgments of others and whether or not communication goals are met. In the literature on social skills training in employment settings (e.g., Breen, Haring, Pitts-Conway, & Gaylord-Ross, 1983; Kelly, Wildman, Urey, & Berler, 1980; Rusch & Menchetti, 1981; Rusch, McKee, Chadsey-Rusch, & Renzaglia, 1988), a number of behaviors have been taught which were observable and could be discreetly defined and reliably counted. Some of the behaviors trained included such skills as asking questions, following directions, requesting assistance, and greetings. The communicative form used in the majority of these studies has been verbal; study participants have been asked to exhibit these various social skills through verbal forms, or talking. Workers need to be able to exhibit a variety of valued task and non-task-related social behaviors; however, the observable form of the behavior may not always have to be verbal (Chadsey-Rusch, 1986).

There are also other behaviors or processes that are not observable, but thought to be used when engaging in social interactions. These are the behaviors used to perceive or decode social contexts, make decisions about the observable behavior to exhibit, and evaluate the effectiveness of the behavior used based on the feedback from others and whether or not the social goal was met. Inherent in this process is the ability to make fine

discriminations based on setting, social occasion, and the people involved in the social interaction. Although it is difficult to measure this problem-solving process, several researchers who have proposed social-skill models are convinced it is essential to social competency (Argyle & Kendon, 1967; Ladd & Mize, 1983; Greenspan, 1981; McFall, 1982; Trower, 1982). There is also data to suggest that the lack of this process has contributed to job loss among workers with mental retardation (Greenspan & Shoultz, 1981; Hanley-Maxwell et al., 1986; Martin et al., 1986). In addition, there is at least one study that suggests that components of this process can be trained and result in improved social skills (Park & Gaylord-Ross, 1989).

Summary

Social skills can be defined as goal-oriented, rule-governed learned behaviors that are situation specific and vary according to social context; they also involve both observable and nonobservable cognitive and affective elements that assist in eliciting positive or neutral responses and avoiding negative responses from others. This definition of social skills reveals how complex it can be to interact with others, particularly if one looks at the component parts. Yet many of us learn these behaviors easily without much direct instruction. This should not imply, however, that all people are good in all social contexts all of the time. Our abilities vary depending upon our past experiences and reinforcement history; the social occasion, setting, and people in the setting; and the strengths and weaknesses of the observable and nonobservable social behaviors we exhibit.

Even within this definition, there are components and behaviors discussed that are still broad and need to be more precisely defined in order to be useful for teaching. Consider the observable behavior of "having a conversation" or using discourse skills (Hymes, 1972). Discourse skills can be further defined by talking about the behaviors used to initiate, maintain, and terminate an interaction. Additionally, these behaviors can also be analyzed with respect to the grammatical, morphological, syntactical, and semantic skills needed to be effective with others. McFall (1982) has stated that although this "task analysis" of social

skills is a necessary prerequisite for teaching, it is unlikely that this analysis will have to be so fine as to include microbehaviors, such as a wink. However, further research is needed in order to determine the salient behaviors in interactions that elicit positive or neutral responses from others.

The remainder of this paper will review the literature on current approaches used to train social skills in employment settings. These approaches will be analyzed with respect to how closely they match the definition of social skills presented above and how effective they have been in producing generalizable and durable skills.

Social Skill Training Approaches

Chadsey-Rusch (1990) identified five different approaches that have been used to train social skills in employment settings. These five approaches are: (a) social skill training (SST) packages, (b) social scripts, (c) training in natural work settings, (d) self-control training, and (e) process training. Each of these approaches are discussed below.

Social-Skill Training Packages

Social-skill training packages typically consist of the following components: (a) a rationale for why a given social behavior was desirable, (b) an opportunity to observe examples of the behavior (i.e., modeling), (c) an opportunity to practice the behavior, usually in role-play situations, and (d) feedback regarding performance. The majority of the studies utilizing this approach have trained social skills in analogue settings, but several researchers have trained and taken measures in the natural work environment. For example, Kelly, Wildman, Urey, and Berler (1980) used a social skills training package to improve the job interview skills repertoire of four adolescents with mild retardation. Rather than applying the social skills training package to individual trainees, the package was applied to the group across behaviors in a multiple-baseline design. Immediately after a 45-minute training session, individual members of the group participated in a mock interview. Social validation techniques were used to construct the mock interviews (i.e., role plays) and to judge the training effects. Results of the study demonstrated that a group

social skills package was effective for increasing the frequency of job interview behaviors. In addition, these behaviors generalized to an in vivo job interview at a fast food restaurant and were judged by a panel of employers as being improved after training.

Social skill training (SST) packages have also been used to train a variety of other employment-related social skills, including: compliance to directions (Karlan & Rusch, 1982; Rusch & Menchetti, 1981), question-asking during conversations (Chadsey-Rusch, Karlan, Riva, & Rusch, 1984), and handling criticism, taking a joke, and soliciting assistance (Shafer, Brooke, & Wehman, 1985). Although all studies have been successful in training social skills, generalization and maintenance results have been tentative and of questionable durability and quality.

Social Scripts

Gaylord-Ross and Haring (1987) indicated that much of the dialogue or social conversation used between individuals is based on "predictable, repeating scripts" (p. 269). In a study conducted by Breen, Haring, Pitts-Conway, and Gaylord-Ross (1985), a break-time sequence, or script, of social behaviors was taught to four high school students with autism. Nonhandicapped high school students were used as trainers, and generalization effects to an in vivo break time with natural co-workers were measured.

During the simulated break time, the task-analyzed sequence of a social script was taught using instructional assistance along with massed practice for steps that were difficult to learn in the sequence. Once the sequence was learned, generalization to a natural co-worker was measured. When generalization did not occur, a second peer was used as a training co-worker until generalization effects were demonstrated. All four youths learned the social skill scripts and achieved generalization to natural co-workers. However, the experimenter was present during all generalization probes which could have served as a prompt for the trained behaviors to occur, and the training was conducted in the probe setting. Also, it was difficult to determine the specific effects from the social script because this approach was used in combination with multiple trainers.

Natural Work Settings

Nisbet and Hagner (1988) have recommended that supervisors and co-workers be actively involved in the habilitation of workers with severe handicaps. In particular, they discuss the "mentor option" where a co-worker might provide training and support to a worker with disabilities. Stowitschek, McConaughy, Peatross, Salzberg, and Lignugaris/ Kraft (1988) recently conducted a study that capitalized on this idea; however, the study was conducted in a work-activity center rather than in an integrated employment setting. The purpose of this study was to determine whether supervisors' statements of rules for appropriate social responding prior to the work day, paired with supervisors' reminders during the work day and preceding staged occasions for responding, were associated with the use of social amenities by adults with mental retardation. From the results of the study, it appears that some workers did increase the frequency with which they used social amenities with this training, and further increased their rate when they were asked to repeat the rules prior to the work day. It was not possible for Stowitschek et al. to measure generalization across settings and people because the study was conducted in the criterion work setting.

Self-Control Training

Self-control, or self-management, procedures are used to teach individuals to manage their own behavior so they are less dependent on the support or teaching from others. Essentially, there are three types of self-control procedures: (a) self-instruction, where individuals manipulate behavioral antecedents, (b) self-monitoring, where individuals monitor or record their own behavior, and (c) self-reinforcement, where individuals evaluate their own behavior and administer the appropriate consequences. These three procedures have been used in isolation, as well as combined into packages, to teach individuals with disabilities a variety of behaviors, such as academic performance (Albion & Salzberg, 1982) and speed of completing vocational tasks (Crouch, Rusch, & Karlan, 1984).

Recently, several studies have been conducted using self-control procedures to teach social skills in employment settings. Agran, Salzberg, & Stowitschek (1987) used a combination of self-instructions and the typical SST package to teach four adults with moderate mental retardation to initiate interactions with a supervisor when they ran out of work materials or when they needed assistance. Rusch, McKee, Chadsey-Rusch, & Renzaglia (1988) conducted a similar study. In the Rusch et al. study, self-instruction, self-reinforcement, a SST package, and corrective feedback in the generalization setting were used successfully to teach an adolescent with severe handicaps to request assistance when there were work materials missing or when there were not enough work materials to complete the work task. Additionally, Storey and Gaylord-Ross (1987) showed that self-monitoring increased the rate of positive statements made to others during a break-time pool game at a branch office of the AT&T company. However, when treatment effects were assessed in another break area, there was little generalization found.

With the studies reported above, it is difficult to ascertain the specific effects that self-control strategies have had on the acquisition and generalization of social skills. In all of the studies reported above, self-control strategies were used in combination with other intervention approaches. Even with the use of self-control components, however, generalization effects were only demonstrated in one study (Agran et al., 1987).

Process Training

Closely related to use of self-control strategies is the concept of process training. With process training, individuals are taught a generative process of social behavior rather than specific component behaviors (Hollin & Trower, 1988). Argyle and Kendon (1967) originally conceptualized a social skills model which consisted of a series of stages; this process model has also been discussed by McFall (1982). Figure 1 presents a social skills model which is a combination of the theoretical thinking suggested by Argyle and Kendon (1967), McFall (1982), and adapted from Hollin and Trower (1986).

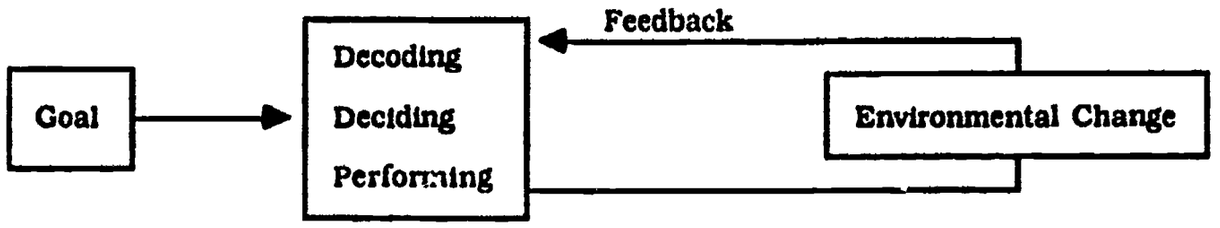


Figure 1. Process Model Adapted from Argyle & Kendon (1967), McFall (1982), and Hollin & Trower (1986).

The first stage in this model is the goal that the individual wants to achieve. Within an employment context, an individual may want to share work-related information, accept criticism, or make friends. Social goals can be viewed as social tasks. As McFall (1982) has stated, social skills need to be chunked into some kind of unit, and the key is to find the best unit with which to categorize and organize events. Within the process approach, it would be important to understand the social goals of workers. If direct service providers chose goals for workers and instituted training programs to achieve these goals, it might be possible that training programs would be unsuccessful because the workers might not have a vested interest in the goal of training.

The second stage of the model begins with the perception or decoding of cues from the environment. Within this model, an individual must be able to discriminate and interpret the verbal and nonverbal behavior of others, as well as the cues and rules associated with the social occasion and environment (McFall, 1982). After decoding, decision skills (McFall, 1982) are used to search for responses that would meet the requirements of the social task, and, from such a list of responses, decide upon the most appropriate response(s)—i.e., individuals must translate their perceptions into plans for action (Hollin & Trower, 1988). After making a decision, the individual then carries out or performs a specific behavior.

The third stage in the model consists of the external consequences of the performance which cause some sort of environmental change (Hollin & Trower, 1988). Here, the

individual judges whether or not the performed behavior appropriately met the demands of the social task or goal. Future response selection is then modified based upon the feedback encountered.

An example may help to clarify the process approach. Assume that a female worker is at risk for losing her job because she does not accept criticism from her supervisor. The worker does not want to lose her job and knows that she will be regarded as more of a valued employee if she learns to accept criticism from others. Thus, her goal (and the social task) is for her to learn to accept criticism from her supervisor.

With decoding skills, the worker is taught to interpret and discriminate cues in the environment when she is criticized. The worker might need to understand what is happening, who is criticizing her, why the person is criticizing her, and how the person might feel.

With decision skills, the worker generates several response alternatives (e.g., ignoring the person, crying, blaming it on others, apologizing, and promising to remedy the situation) and selects the response that has the highest probability of eliciting positive feedback from her environment.

With performance skills, the worker displays a response to the criticism (e.g., apologizes and says she will remedy the situation). Then, the worker evaluates the feedback from her environment in response to the behavior she displayed. She notes how the person feels, how she feels, and decides if she did the right thing. If her behavior resulted in positive feedback from her environment, then she would have met her social goal and would be more likely to emit the same behavior under future, but similar circumstances.

Unfortunately, very little research exists which has investigated the effectiveness of training job-related social skills using a process approach. Recently, Park and Gaylord-Ross (1989) conducted a series of two studies: one was done to determine the efficacy of a process training package for enhancing generalization and the other one was done to determine

whether traditional SST procedures could have produced equal or superior results to the process approach.

In the first study, two youths with mild mental retardation were trained to either increase or decrease a variety of social skills—greetings, making polite and negative comments, mumbling, initiations, and expansions. Contingent effects were seen in the training setting with the onset of process training and the effects generalized to the nontraining or work settings. In the second study, two additional youth with mild mental retardation were trained to exhibit initiations, expansions, and terminations in conversations. First, the youth were trained to exhibit these behaviors with a traditional SST package, and then they were trained to exhibit the behaviors using a process approach. No generalization effects appeared in the criterion work setting until process training was instituted. Thus, Park and Gaylord-Ross (1989) demonstrated that youth with mild mental retardation could learn the process for generating social behaviors, and that the process approach did lead to the generalization of behaviors across settings. Additionally, this study begins to suggest that the process approach may be more effective for training job-related social skills than the traditional SST package.

Analysis of Training Studies and Their Relationship to the Definition of Social Skills

In this paper, social skills were defined as goal-oriented, socially acceptable learned behaviors that are situation specific and vary according to social context; they also involve both observable and nonobservable cognitive and affective elements that assist in eliciting positive or neutral responses and avoiding negative responses from others. Each of the five approaches to training, which were discussed above, typically focused on training observable behaviors within the context of specific situations or scenarios presented to study participants. In this respect, all of these approaches meet at least two of the elements included within the definition of social skills—a focus on observable behaviors that were situation specific. However, except for the studies incorporating self-control strategies or the process approach, little attention has been paid to the goals of training (or what the

participant might want to achieve) or the nonobservable cognitive and affective elements that are associated with social skills. Specifically, within most of the training approaches, participants have not been trained to perceive and interpret social contexts, nor have they been trained to generate and decide upon effective responses that would best meet the demands of a social situation. Additionally, they have not been trained to evaluate their own social behavior because environmental consequences are generally provided by the trainer. In fact, it appears that it is only the process approach that begins to address most of the components specified in the definition.

But is the process approach the answer to training social skills? Clearly, there has been so little research regarding this approach that no answer can be given. Because the approach is more theoretical than applied at this time, there are many questions about how to operationalize and teach the process. For example, if the decoding process is taught, it is not clear which specific social cues individuals should be taught to discriminate; that is, what are the most salient social cues that set the occasion for social responses? Within the definition proposed above, we know that social skills vary depending upon the physical setting, the people in the setting, and the social context or occasion for the interaction. If individuals are taught to respond to cues related to each of these three variables, will they be more likely to decode social tasks more accurately? Also, what is the best way to teach the decision component of the process, especially if individuals generate few alternatives for responding, or only generate inappropriate responses? Additionally, how can we be certain that the cognitive aspects of the process approach are being used in the performance setting since it is difficult to measure "thinking"? Thus, it may be that before we can answer the question about the effectiveness of the process approach for facilitating social skills, we need to ask questions about the best method(s) to operationalize the process so it can be taught.

Another pressing issue with regard to the process approach is how best to use it (or whether it can be used) with individuals who have severe language impairments. Because the process approach is taught primarily through language in analogue settings, there may

be some question whether it can be used with individuals with severe disabilities. Many researchers who work with individuals with severe handicaps (Brown et al., 1983; Coon, Vogelsberg, & Williams, 1981; Marchetti, McCartney, Drain, Hooper, & Dix, 1983) recommend that skills be taught in the natural environment. The reasoning behind this philosophy is that generalization effects will be enhanced. However, it is frequently unnatural and inconvenient for direct service providers to intervene and provide instruction to workers when they are engaged in social interactions with supervisors, co-workers, or customers. Additionally, some important social skills (e.g., responding to criticism) occur infrequently, and the probability is small that a trainer will be in close proximity when an episode like this occurs. Even though others (e.g., Nisbet & Hagner, 1988; Rusch & Menchetti, 1981) have recommended that co-workers be trained to provide quick instructions and feedback, such training may not contain all the necessary components (e.g., establishing goals, cognitive elements) that appear important for the development of generative social skills. Also, if co-workers are used as trainers, it is not clear what kinds of effects this would have on the establishment of other types of relationships, for example, friendships.

It is possible that the steps in the process approach could be simplified, or externally generated mediators other than language (e.g., the use of picture cues) could be used to teach the process. Picture cues have been used successfully to teach workers with moderate and severe mental retardation a variety of task-related job skills (e.g., Wacker & Berg, 1983). Certainly, research is needed to determine if the process approach is a viable and efficient way to teach general social skills, particularly to workers with severe disabilities.

Summary

In this paper, social skills were defined as being (a) goal oriented, (b) rule-governed learned behaviors, (c) that are situation specific and vary according to social context; they also involve (d) both observable and nonobservable cognitive and affective elements that assist in eliciting positive or neutral responses and avoiding negative responses from

others. Each of the four components of the definition were further discussed and illustrated with examples from employment settings. Additionally, five approaches that have been used to train social skills in employment settings were described and analyzed with respect to the proposed definition.

If the definition of social skills presented in this paper is accepted, then it can be concluded that with the possible exception of the process approach, few training approaches incorporate all aspects of the definition into their procedures. It may be that the proposed definition lacks validity; however, elements of this definition have come from researchers teaching social skills to children (e.g., Cartledge & Milburn, 1986), as well as a variety of other clinical populations, including persons with schizophrenia, phobias, mental retardation, depression, and substance abuse (Hollin & Trower, 1988). The goal of social skills training in employment settings should be to train generative skills that enable employees to participate equally in the social network of the workplace (Chadsey-Rusch, 1990). It is possible that a combination of training approaches will be needed to help workers meet this goal. Regardless of the approach or approaches chosen, it may be helpful to attend to the definition of social skills proposed herein so that researchers and practitioners direct their efforts toward a common aim.

References

Agran, M., Salzberg, C. L., & Stowitschek, J. J. (1987). An analysis of the effects of a social skills training program using self-instructions on the acquisition and generalization of two social behaviors in a work setting. The Journal of the Association for Persons with Severe Handicaps, 12, 131-139.

Albion, F. M., & Salzberg, C. L. (1982). The effect of self-instructions on the rate of correct addition problems with mentally retarded children. Education and Treatment of Children, 15, 121-131.

Argyle, M., & Kendon, A. (1967). The experimental analysis of social performance. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 3, pp. 55-98). New York: Academic.

Breen, C., Haring, T., Pitts-Conway, V., & Gaylord-Ross, R. (1985). The training and generalization of social interaction during breaktime at two job sites in the natural environment. The Journal of the Association for Persons with Severe Handicaps, 10, 41-50.

Brickey, M. P., Campbell, K. M., & Browning, L. J. (1985). A five-year follow-up of sheltered workshop employees placed in competitive jobs. Mental Retardation, 23, 67-73.

Brown, L., Nisbet, J., Ford, A., Sweet, M., Shiraga, B., York, J., & Loomis, R. (1983). The critical need for nonschool instruction in educational programs for severely handicapped students. The Journal of the Association for Persons with Severe Handicaps, 8, 71-77

Cartledge, G., & Milburn, J. F. (1983). Social skill assessment and teaching in the schools. In T. Kratochwill (Ed.), Advances in school psychology (pp. 175-235). Hillsdale, NJ: Earlbaum.

Chadsey-Rusch, J. (1986). Identifying and teaching valued social behaviors in competitive employment settings. In F. R. Rusch (Ed.), Competitive employment: Issues and strategies (pp. 273-287). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J. (1990). Teaching social skills. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues. Sycamore, IL: Sycamore Publishing Company.

Chadsey-Rusch, J., & Gonzalez, P. (1988). Social ecology of the workplace: Employer's perceptions versus direct observation. Research in Developmental Disabilities, 9, 229-245.

Chadsey-Rusch, J., Gonzalez, P., Tines, J., & Johnson, J. R. (in press). Social ecology of the workplace: An examination of contextual variables affecting the social interactions of employees with and without mental retardation. American Journal of Mental Retardation.

Chadsey-Rusch, J., Karlan, G. R., Riva, M., & Rusch, F. R. (1984). Competitive employment: Teaching conversation skills to adults who are mentally retarded. Mental Retardation, 22, 218-225.

Coon, M., Vogelsberg, R. T., & Williams, W. (1981). Effects of classroom public transportation instruction on generalization to the natural environment. The Journal of the Association for Persons with Severe Handicaps, 6, 46-53.

Crouch, K. P., Rusch, F. R., & Karlan, G. R. (1984). Competitive employment: Utilizing the correspondence training paradigm to enhance productivity. Education and Training of the Mentally Retarded, 19, 268-275.

Ford, L., Dineen, J., & Hall, J. (1984). Is there life after placement? Education and Training of the Mentally Retarded, 19, 191-296.

Gaylord-Ross, R. J., & Haring, T. (1987). Social interaction research for adolescents with severe handicaps. Behavior Disorders, 12, 264-275.

Greenspan, S., & Shoultz, B. (1981). Why mentally retarded adults lose their jobs. Social competence as a factor in work adjustment. Applied Research in Mental Retardation, 2(1), 23-38.

Hanley-Maxwell, C., Rusch, F. R., Chadsey-Rusch, J., & Renzaglia, A. (1986). Factors contributing to job terminations. The Journal of the Association for Persons with Severe Handicaps, 11, 45-52.

Hill, J. W., Wehman, P., Hill, M., & Goodall, P. (1986). Differential reasons for job separation of previously employed persons with mental retardation. Mental Retardation, 24, 347-357.

Hollin, C. R., & Trower, P. (1988). Development and application of social skills training: A review and critique. In M. Hersen, R. M., Eisler, & P. M. Miller (Eds.), Progress in behavior modification (Vol. 22, pp. 165-214). Newsbury Park, CA: Sage.

House, J. S. (1981). Work stress and social support. Redding, MA: Addision-Wesley.

Hymes, D. H. (1972). On communicative competence. In J. B. Pride & J. Holmes (Eds.), Sociolinguistics (pp. 269-293). Harmondsworth, UK: Penguin Books.

Karlan, G. R., & Rusch, F. R. (1982). Analyzing the relationship between acknowledgement and compliance in a nonsheltered work setting. Education and Training of the Mentally Retarded, 17, 202-208.

Kelly, J. A. (1982). Social-skills training: A practical guide for interventions. New York: Springer.

Kelly, J. A., Wildman, B. G., Urey, J. R., & Berler, E. S. (1980). Small group behavioral training to improve the job interview skills repertoire of mildly retarded adolescents. Journal of Applied Behavior Analysis, 13, 461-471.

Kirmeyer, S. L. (1988). Observed communication in the workplace: Content, source, and direction. Journal of Community Psychology, 16, 175-187.

Klein, K. J., & D'Aunno, T. A. (1986). Psychological sense of community in the workplace. Journal of Community Psychology, 16, 175-187.

Kochany, L., & Keller, J. (1981). An analysis and evaluation of the failures of severely disabled individuals in competitive employment. In P. Wehman (Ed.), Competitive employment: New horizons for severely disabled individuals. Baltimore: Paul H. Brookes.

Ladd, G. W., & Mize, J. (1983). A cognitive-social learning model of social-skill training. Psychological Review, 90, 127-157.

Lignugaris/Kraft, B., Salzberg, C. L., Rule, S., & Stowitschek, J. J. (1988). Social-vocational skills of workers with and without mental retardation in two community employment sites. Mental Retardation, 26, 297-305.

Marchetti, A., McCartney, J., Drain, S., Hooper, M., & Dix, J. (1983). Pedestrian skills training for mentally retarded adults: Comparsion of training in two settings. Mental Retardation, 2, 107-110.

Martin, J. E., Rusch, F. R., Lagomarcino, T., & Chadsey-Rusch, J. (1986). Comparison between workers who are nonhandicapped and mentally retarded: Why they lose their jobs. Applied Research in Mental Retardation, 7, 467-474.

McFall, R. M. (1982). A review and reformulation of the concept of social skills. Behavioral Assessment, 4, 1-33.

Nisbet, J., & Hagner, D. (1988). Natural supports in the workplace: A reexamination of supported employment. The Journal of the Association for Persons with Severe Handicaps, 13, 260-267.

Park, H., & Gaylord-Ross, R. (1989). Process social skill training in employment settings with mentally retarded youth. Manuscript submitted for publication.

Pogrebin, L. C. (1987). Among friends. New York: McGraw-Hill.

Rusch, F. R. (1979). Toward the validation of social/vocational survival skills. Mental Retardation, 17, 143-145.

Rusch, F. R., McKee, M., Chadsey-Rusch, J., & Renzaglia, A. (1988). Teaching a student with severe handicaps to self-instruct: A brief report. Education and Training of the Mentally Retarded, 23, 51-58.

Rusch, F. R., & Menchetti, B. M. (1981). Increasing compliant work behaviors in a non-sheltered work setting. Mental Retardation, 19(3), 107-111.

Rusch, F. R., Schutz, R. P., & Agran, M. (1982). Validating entry-level survival skills for service occupations: Implications for curriculum development. Journal of the Association for Persons with Severe Handicaps, 7, 32-41.

Salzberg, C. L., Agran, M., and Lignugaris/Kraft, B. (1985). Behaviors that contribute to entry-level employment: A profile of five jobs. Applied Research in Mental Retardation, 7, 299-314.

Schein, E. H. (1981). SMR Forum: Does Japanese management style have a message for American managers? Sloan Management Review, 23, 55-68.

Shafer, M. S., Brooke, V., & Wehman, P. (1985). Developing appropriate social-interpersonal skills in a mentally retarded worker. In P. Wehman & J. W. Hill (Eds.), Competitive employment for persons with mental retardation: From research to practice (Vol. 1, pp. 358-375). Richmond: Rehabilitation Research and Training Center, Virginia Commonwealth University.

Storey, K., & Gaylord-Ross, R. (1987). Increasing positive interactions by handicapped individuals during a recreational activity using a multicomponent treatment package. Research in Developmental Disabilities, 8, 627-649.

Stowitschek, J. J., McConaughy, E. K., Peatross, D., Salzberg, C., & Lignugaris/Kraft, B. (1988). Effects of group incidental training on the use of social amenities by adults with mental retardation in work settings. Education and Training of the Mentally Retarded, 23, 202-212.

Trower, P. (1982). Toward a generative model of social skills: A critique and synthesis. In J. P. Curran & P. M. Monti (Eds.), Social skills training (pp. 399-427). NY: The Guilford Press.

Wacker, D., & Berg, W. (1983). Effects of picture prompts in the acquisition of complex vocational tasks by mentally retarded adolescents. Journal of Applied Behavior Analysis, 16, 417-433.

Wehman, P., Hill, M., Goodall, P., Cleveland, V. B., & Pentecost, J. H. (1982). Job placement and follow-up of moderately and severely handicapped individuals after three years. The Journal of the Association for Persons with Severe Handicaps, 7, 5-15.

Social Interactions of Secondary-Aged Students with Severe Handicaps: Implications for Facilitating the Transition from School to Work

Janis Chadsey-Rusch

One of the quality indicators of state-of-the-art educational programs for students with severe handicaps is that the curriculum is functional and prepares them for future environments (Brown, Nietupski, & Hamre-Nietupski, 1976; Brown, Pumpian, Baumgart, Vandeventer, Ford, Nisbet, Schroeder, & Gruenewald, 1981; Snell, 1987). One important future environment for which all students should be prepared is the work setting. Indeed, this environment has been viewed as so important that recent legislation has allocated funds to study it (Rusch & Phelps, 1987). One reason the workplace has received increased attention is that many graduating youth with handicaps fail to secure employment (Hasazi, Gordon & Roe, 1985; Mithaug, Horichi, & Fanning, 1985; Wehman, Kregel, & Seyfarth, 1985).

When students with severe handicaps graduate from school, it is probable that many of them will need some type of ongoing support to acquire and maintain employment. The blueprint to accomplish this goal, called the supported employment model, has been described and implemented, and the results have been effective (Rusch, 1986; Vogelsberg, 1986; Wehman, 1986). Even with this model, however, many students remain unemployed or lose their jobs (Edgar & Levine, 1988). The work setting is a complex environment, and we really have limited knowledge about how to ensure that students with severe handicaps become an integral part of that environment.

Some of the skills that students will need to develop in high school to prepare them for work settings are vocational or job-task skills. Another important skill area is that of social skills. The workplace is a highly social environment; workers interact frequently about job- and non-job-related matters (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft, Rule,

Salzberg, & Stowitschek, 1986). In fact, social skills are considered so important in the workplace that workers often lose their jobs because they have displayed inappropriate social behaviors (e.g., Brickey, Campbell, & Browning, 1985; Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986).

Before we teach the social skills that are needed in employment settings, we must identify the skills that are valued and occur naturally. Employer surveys have provided information on valued social skills from a supervisor's perspective. For example, Rusch, Schutz, and Agran (1982) sent questionnaires to 120 potential employers from food service and janitorial/maid occupations in Illinois to solicit information about their expectations for entry into employment. Two social behaviors—verbally reciting full name on request and following one instruction provided at a time—were mentioned by every employer as being critical for competitive employment.

In another study, Salzberg, Agran, and Lignugaris/Kraft (1986) surveyed employers from five different jobs to obtain their opinions regarding social behaviors important for entry-level work. The results from this study indicated that social behaviors related to worker productivity (e.g., asking supervisors for assistance, following directions, responding to criticism, getting information before a job, offering to help co-workers) were rated higher in importance than general personal social behaviors (e.g., listening without interrupting, acknowledging, and expressing appreciation to co-workers).

Recently, several studies have been conducted where the social interaction patterns of both handicapped and nonhandicapped employees have been observed directly (Chadsey-Rusch & Gonzalez, 1988; Chadsey-Rusch, Gonzalez, Tines, & Johnson, 1989; Kirmeyer, 1988; Lignugaris/Kraft, Salzberg, Rule, & Stowitschek, 1988). Interestingly, even though these studies have been conducted in different states (e.g., Illinois, Utah, and Missouri) and across a variety of jobs (e.g., food service, printing, furniture refurbishing, police dispatching), there seems to be a fairly consistent pattern of social interactions that occur in work settings. For example, all of the authors cited above reported that task-related interactions occurred

more than non-task-related interactions and that workers interacted more with their co-workers than with their supervisors. Additionally, Lignugaris/Kraft et al. (1988) and Chadsey-Rusch and Gonzalez (1988) both found that the workers in their studies were involved in interactions around similar content areas: directions, questions, information, and teasing and joking.

Although more research is needed to identify the range of social interactions that occur in work settings, the behaviors identified so far provide a beginning description of the types of interactions that students with disabilities are likely to encounter when they make the transition from school to work. What is unknown, however, are the types of interactions that secondary-aged students with severe disabilities display. Knowledge of these interactions could provide baseline information on the types of social behaviors exhibited by students as they engage in their preparation for transition.

A variety of assessment approaches can be used to study social interactions (e.g., rating scales, role plays); however, it is only through direct observation in natural contexts that one is likely to see the social behaviors a person would typically emit. With many direct observational studies, a priori behavioral codes are generally used to measure behavior. However, with an established code, it is possible that important social behaviors might be missed (because they are not included on the code), and rich descriptions of contextual variables which influence social interactions may be difficult to capture. Consequently, this study sought to describe the social interactions used by a group of secondary-aged students with severe handicaps with the use of narrative recording procedures. The student's interactions were described when they arrived at school, during lunch, and when they were engaged in vocational training. The results are discussed with respect to the implications they have for facilitating the transition from school to work.

Method

Subjects

Seven male and three female students with severe handicaps participated in the study. Most of the students could walk independently; however, four of the students were nonambulatory. The average age of the students was 18.4 years (SD = 1.8). According to AAMD Classification, three students were labeled severely mentally retarded and seven students were labeled severely/profoundly mentally retarded. IQ scores were only reported for two participants (23 and 32).

Although all of the students responded to communication from others, few of the students actively initiated communication. Three of the students were involved in communication programs designed to enhance their verbal skills and the rest of the students were learning augmentative communication systems. Communication/social goals included such skills as answering yes/no and "wh" questions, initiating requests, using polite forms of conversation and correct forms of pronouns, and responding to greetings.

Nine of the students were involved in community-based vocational training experiences, and one student was receiving training on a job task at school. The students had been receiving training on the same job task for an average of 1.5 years (range of 9 months to 2 years 9 months). The classroom teacher judged five of the students to be in the maintenance phase of learning on their vocational tasks and the other five students to be in the fluency stage of learning.

Setting

All of the students attended a public junior high school. However, the majority of the students were involved in community-based instruction, so only a few programs were implemented at the school. Most of the programs implemented at school were conducted in a segregated classroom that was team taught by two certified special education teachers.

The arrival observations, which were 20 minutes in length, began outside the school building where the teachers escorted the students from the bus to their classroom. If 20 minutes had not elapsed, observers continued to collect arrival data in the classroom.

The lunch observations were conducted in the school cafeteria. All of the participants in the study ate lunch at the same time as their nonhandicapped classmates.

The vocational observations were conducted across a variety of training sites. One site was a cable company where three of the students sat together at a table. One of the students cleaned cable boxes, one stuffed cable magazines into a plastic bag, and the third student stripped cable wires.

Three other students were involved in food-service training at a hospital. They performed such duties as sorting silverware, cleaning tables, and filling baskets with condiments.

The remaining four students were placed individually in training settings. One student watered plants at a library, another student stamped envelopes at a United Way office, and one student filled soap dispensers at a chemical supply company. The student who worked at school was learning to operate a ditto machine. This task was being taught in the student's classroom.

Dependent Measures

Three dependent measures were used in the present study. The primary measure consisted of written narrative recordings made while observers recorded the social interactions of all participants. In addition to the narrative recordings, two classroom teachers were asked to rate the students on the Social Competence Rating Scale.[1] This scale was designed specifically for this study and consisted of the same types of social behaviors that were contained in the social code that was used to analyze the narrative records. Thus, a comparison could be made between teachers' perceptions of their students' social behaviors and behaviors observed upon direct observation. The instrument consisted of 46 items; each teacher rated each student on a Likert-type scale ranging from 1 (meaning the

student never displayed the behavior) to 5 (meaning the student always displayed the behavior). The rating scale was completed independently by classroom teachers, one time, over the course of the observations.

The other measure designed specifically for this study was a parent interview which consisted of 18 open-ended questions. This measure probed parents' feelings and observations about their childrens' future vocational opportunities and their social relationships with their peers.

Data Collection

Narrative recordings. All data were collected using narrative recordings. These procedures were used for several reasons: (a) to ensure that frequently occurring and important social behaviors were not missed due to an a priori behavioral code, and (b) to ensure that the behaviors were recorded within the social context where they occurred.

With these procedures, nearly all students were observed five times during each of the three different time periods or conditions: arrival at school, lunch, and during vocational training. During all conditions, students were observed for approximately 20 minutes; thus, each student was observed for a total of about 5 hours.

Observers stood approximately 4 feet from each student and described (in writing) social interactions directed to the student and social interactions the student directed to others. Each observer carried a clipboard and recorded his or her narrations on forms designed for the study. A sample of part of one of the narrative records is included below.

> The teacher says, "How are you doing?" The student does not respond. The teacher says "Did you have a nice night?" The student does not respond. The teacher says "Go to the classroom." The student follows the teacher and goes through both sets of doors. The teacher says "Did you have a nice night?" The student does not respond.

In addition to carrying a clipboard, observers also wore an earphone which was attached to a small tape recorder that signaled the observer at one-minute intervals. After each one-

minute interval, observers skipped a line on their recording form. There were 20 one-minute interval signals on each tape.

Other measures. The Social Competence Rating Scale was completed once for each student by teachers independently during the course of data collection. The parent interviews were conducted at the end of the study during a telephone conversation between the parents and either the author or an undergraduate student in special education. Each telephone interview lasted between 15 and 20 minutes.

Observers and Observer Training

Five individuals participated as observers in the study. Two of the observers were doctoral students; one was in vocational technical education, and one was in special education. Two of the observers were undergraduates in special education and enrolled in a moderate and severe handicaps teacher-certification program. The fifth observer was the author of this manuscript.

Although narrative recording procedures have been used frequently in qualitative research (e.g., ethnography, ecology), little systematic training information is available on how best to train observers to collect narrative records. Part of this difficulty occurs because quantitative procedures are rarely used to assess interobserver reliability. As LeCompte and Goetz (1982) point out, in qualitative research "agreement is sought on the description or composition of events rather than on the frequency of events" (p. 41).

Nevertheless, procedures were taken to ensure that observers were trained in as reliable a fashion as possible. First, all observers were required to read an observer-training manual that described the rules and procedures for writing narrative records. After the observers had studied the manual, they were required to score at least 95% correct on a test of the material. All observers achieved this score.

After passing the test, observers participated in training sessions in which they were shown a videotape from the classroom in which they would be observing. Observers were trained to record an uninterrupted stream of behavior with as much detail as possible about

the social interactions of a designated individual. Narratives were used to describe what the person did and said as well as information about the setting and social context. Other individuals were recorded only in relationship to the person selected for observation. Observers essentially made a chronological record of the sequence of actions in context for the targeted individual.

All observers watched the videotape and recorded interactions for five minutes and then read their narratives aloud for comparison with the author whose observation was used as the standard. Feedback was given regarding the frequency and context of the social interactions described, the objectivity of the observations, and the observer's ability to record accurately the sequence of behaviors and events throughout the observation. Once observers achieved 80% reliability on two consecutive training observations, they were allowed to collect data in the field. After data collection began, observers met weekly to participate in another training session and to raise any questions that they had.

Analysis

All handwritten narrations were dictated by the observers into tape recorders and then typed by a typing pool of secretaries. This procedure was necessary because the penmanship used by some observers was difficult to read. When the observers dictated their narrations, they added punctuation and articles (e.g., the, a) so that their narrations consisted of complete sentences. Observers dictated their observations periodically throughout the study.

In order to analyze the narrations, codes were developed and assigned to the behaviors described within the narrations. The behaviors included in the codes were based upon patterns that were emerging from the data and from behaviors that had been observed in other integrated employment settings (e.g., Chadsey-Rusch & Gonzalez, 1988). All social interactions were coded in the following manner: (a) the main initiator and receiver of the interactions were noted, (b) if the initiator was responded to, it was noted, and (c) each interaction was coded as either social/non-task related or social/task related. Initiators and

receivers of interactions could be the subjects being observed, teachers or other adults, and peers. Any interaction was coded as social/non-task if it was unrelated to either school or vocational tasks or assignments. An interaction was coded as social/task if it was related to regular instructional classwork or to a vocational task.

In addition to the above codes, interactions were also coded qualitatively for the purpose they served. There were 11 purpose codes (Table 1). Finally, if the students emitted any behavior that might be considered socially inappropriate (e.g., self-abuse) by others in the setting, the behavior was coded as being bizarre.

The narratives were coded after all of the observations were completed and typed (about one month after the end of data collection). Two of the individuals who had participated as observers were the coders (the doctoral student in vocational technical education and one of the undergraduate students in special education). Once the coders reviewed the definitions for the codes and achieved 80% reliability on three consecutive training narratives, they were allowed to code the actual data collected in the present study.

Reliability Procedures

Two types of reliability were computed—intercoder reliability and interobserver reliability. Intercoder reliability was used to measure the agreement between two persons when they assigned codes to the same narrative. Interobserver reliability was used to measure the agreement between two observers' narrative recordings when they observed the same subject at the same time.

Intercoder reliability. Intercoder reliability was calculated on 20% of the total number of observations. Random selection was used to obtain one observation from each time condition (i.e., Arrival, Lunch, and Vocational) for each student. Each reliability checker (i.e., the doctoral student in vocational technical education and the undergraduate student in special education) coded the same narrative independently of one another.

Reliability was calculated using the point-by-point agreement of occurrence method (Foster & Cone, 1986) which is a more stringent method of computing reliability than

Table 1

Purpose Codes for Narrations

---

1. To Direct (D) - A verbal statement or question, motoric gesture, or both asking or demanding a person to engage or not engage in a verbal or physical behavior (e.g., "Take out a sheet of paper."//Why don't you come over to my house?//Can you hand me the wire cutters?/).

2. To Question (Q) - A verbal statement in the interrogative form directed to a person in order to obtain information or clarification. This should also include implied interrogatives (e.g., "So you had to take the bus today."). Other examples include: /"Did you go out last night?"/"Have you done your exercises yet?"/

3. To Criticize (C) - A derogatory, corrective, or punishing statement or question regarding a person's family (e.g., "Your sister sounds like a bitch."), friends (e.g., "Your friend gets into a lot of trouble?"), possessions (e.g., "Your car is in such bad shape that I would buy a new one."), appearance (e.g., "You need a hair cut."), and behavior (e.g., "Take your hands out of your pants"/Stop that noise").

4. To Praise (P) - A complimentary statement regarding a person's family (e.g., "I wish my mom was more like your mom."), friends (e.g., "You are lucky to have a boyfriend like Don."), possessions (e.g., "I like your new purse."), appearance (e.g., "Great tan."), and behavior (e.g., "You are working so fast I'm having trouble keeping up with you," or "ok," "fine," "good job," or "all right!" Note: Praise may also be in the form of a description of appropriate behavior such as "That's the way to wash your hands!" or "Good shutting the door."

5. Requests for Assistance (R) - Asking a person to help in the completion of a vocational-related task (e.g., "Help me collect the papers, O.K.?), or social-related task (e.g., "Will you help pick out some good tapes?").

6. To Offer Assistance (O) - A verbal statement used to extend help to a person in order to complete a school or vocational-related task (e.g., "Let me help cut the cable wires"), or social-related situation ("Let me help carry that stuff to class"), or a self-initiated, spontaneous, non-verbal behavior described in the narrative as "helping."

Table 1 (continued)

7. To Be Polite—Use Social Amenities (A) - To use words commonly associated with politeness or manners (e.g., thank you, please, excuse me, pardon me, you're welcome, gesundheit).

8. To Greet/To Depart (G) - To acknowledge the presence of another by waving, nodding, or saying such things as "Hi," "Good morning," "How ya doing?," "What's happening?" or to use words or gestures commonly associated when departing (e.g., waving, "Bye," "See you tomorrow.").

9. To Tease or Joke (T) - (a) Any question, comment, response, joke, gesture (e.g., imitation, pointing) or laughter which pokes fun at a person, (b) any question, comment, response, joke, gesture which is described in the narrative as "a joke" or "humorous" or, (c) any behavior that elicits laughter from one or more people.

10. To Converse/Comment/Share Information (I) - Any verbal statement (or prompt, demonstration) in past, future, or present tense regarding a task-related or social-related topic.

11. To Get Attention (H) - A word, phrase, gesture, or sound used to attract the attention of another, for example, "Hey;" "Hey, Robin;" "Tim;" "You there;" a wave, whistle, or raising one's hand.

---

overall percentage of agreement. In this method, agreements of occurrence were divided by agreements of occurrence plus disagreements of occurrence and multiplied by 100. An agreement was scored when both coders placed the same code over the same sentence in the narrative. Within each single interaction or sentence, four or more codes could have been used; consequently, at least four disagreements were possible. The average intercoder reliability scores for eight observations in each condition are included in Table 2.

Interobserver reliability. As indicated above, measuring the interobserver reliability of narrative records is difficult and complex because observers differ in their choice of words, emphasis, and amount of detail provided (Schoggen, 1978). In many studies of this type, agreement is only reported between analysts or coders; quantitative measures are rarely used to report agreement between observers. In the present study, however, an attempt was made to assess quantitatively the agreement between observers. Reliability checks were randomly selected across 10% of the total observation sessions. Two trained observers watched the same student at the same time and independently completed their narrative recordings. These observations were then coded in order to compute reliability.

Reliability was once again calculated using the more stringent agreement of occurrence method where the number of occurrences were divided by the number of agreements of occurrence plus disagreements of occurrence and multiplied by 100. An agreement was scored when both observers identified the same initiators and receivers of interactions, responses to interactions, task or non-task-related interactions, and purpose of interactions. The average interobserver reliability scores based upon four observations in each condition are also included in Table 2.

Results

The results from the students' social interactions are presented along three dimensions: (a) task versus non-task interactions, (b) direction of interactions, and (c) purpose of interactions by condition. In addition, results from the teacher ratings and parent

Table 2

Reliability Scores

Measure	Mean Percentage of Intercoder Agreement			Mean Percentage of Interobserver Agreement		
	Arrival	Lunch	Vocational	Arrival	Lunch	Vocational
Initiators of Interactions	91	95	95	87	86	89
Receivers of Interactions	91	95	97	87	86	89
Responses to Interactions	90	93	92	76	75	81
Task/Non-task Interactions	74	85	93	87	86	89
Bizarre Behavior	73	91	70	82	100	85
Purpose Codes						
Directions	93	90	86	95	84	78
Questions	88	98	85	81	80	79
Information	62	75	71	80	73	91
Praise	93	100	95	67	--	85
Teasing/Joking	63	64	100	--	100	--
Greetings	91	100	100	71	100	100
Criticism	74	50	66	100	100	86

interviews are discussed. The majority of the results are presented using descriptive statistics; however, qualitative data are used to enhance quantitative measures.

Task versus Non-task Interactions

Overall, students were involved in 3,584 interactions. This high number of interactions is not surprising, because the students were observed during two conditions (arrival and lunch) where teachers were likely to be engaged in teaching and interacting with students about instructional programs. For example, during lunch teachers frequently implemented instructional programs regarding feeding or provided instructional prompts regarding mealtime behavior. The following narration is from an observation that spanned 6 minutes.

> The student (S) is eating. A teacher comes near, but there is no interaction. S continues to eat. The teacher says "Small bites, S. Chew your food up." S does not respond. S continues to eat. The teacher says, "Chew them up, S." S does not respond. S continues to eat.

All of the interactions were analyzed to determine the percentage that were task related (i.e., about school tasks or work) and non-task related (i.e., about everything else). The data indicated that students were involved in more task-related interactions (80%) than non-task-related interactions (20%). In fact, the percentage of task-related interactions was highest across all three conditions—Arrival (74%), Lunch (78%), and Vocational (87%).

Direction of Interactions

Students could interact with teachers, other adults, and peers with and without handicaps. The data were analyzed to determine the percentage of interactions involved in by all of these individuals.

The data indicated that students interacted 99% of the time with other adults (teachers) and 79% of these interactions were about school or vocational tasks. The majority of these interactions (96%) were initiated by the adults rather than by the students. In contrast, students interacted very little with their peers; only 1% of all of their interactions involved

any peers (handicapped and nonhandicapped alike). When the students did interact with their peers, most of the interactions were non-task in nature and involved greetings or offers of assistance. Although the students attended an integrated school, very few interactions occurred between them and their nonhandicapped peers—out of a total of 3,584 interactions, only 8 interactions involved nonhandicapped peers.

Purpose by Condition

Although 11 purpose codes were used to analyze the data, the majority of the interactions served the following purposes: direct, question, inform, praise, tease and joke, greet, and criticize. The mean number of interactions by condition are displayed in Figure 1.

During arrival, students were involved primarily in interactions where the purpose was to direct, question, or provide information. Again, it must be remembered that these interactions were generally initiated by the teachers and were primarily about task-related topics. An example is presented below.

> S hands the teacher his wallet. The teacher says, "Stop. You don't cross this off until you do it." Then the teacher says, "What are you supposed to do now?" S answers. The teacher says "O.K., go over there." S goes to the desk and gets the attendance sheet.

In addition to being involved in interactions where the purpose was to direct, question, or provide information, the students were also involved in an average of 10 greeting interactions.

During lunch, students were again primarily involved in interactions where the purpose was to question, direct, or provide information. These three types of interactions constituted 82% of all interactions that the students were involved in while eating lunch. An example of a common interaction used to provide information and give a direction is presented below.

> The teacher continues to set up lunch. The teacher tells S the choices for lunch. Then the teacher says, "O.K., let's start with the beans."

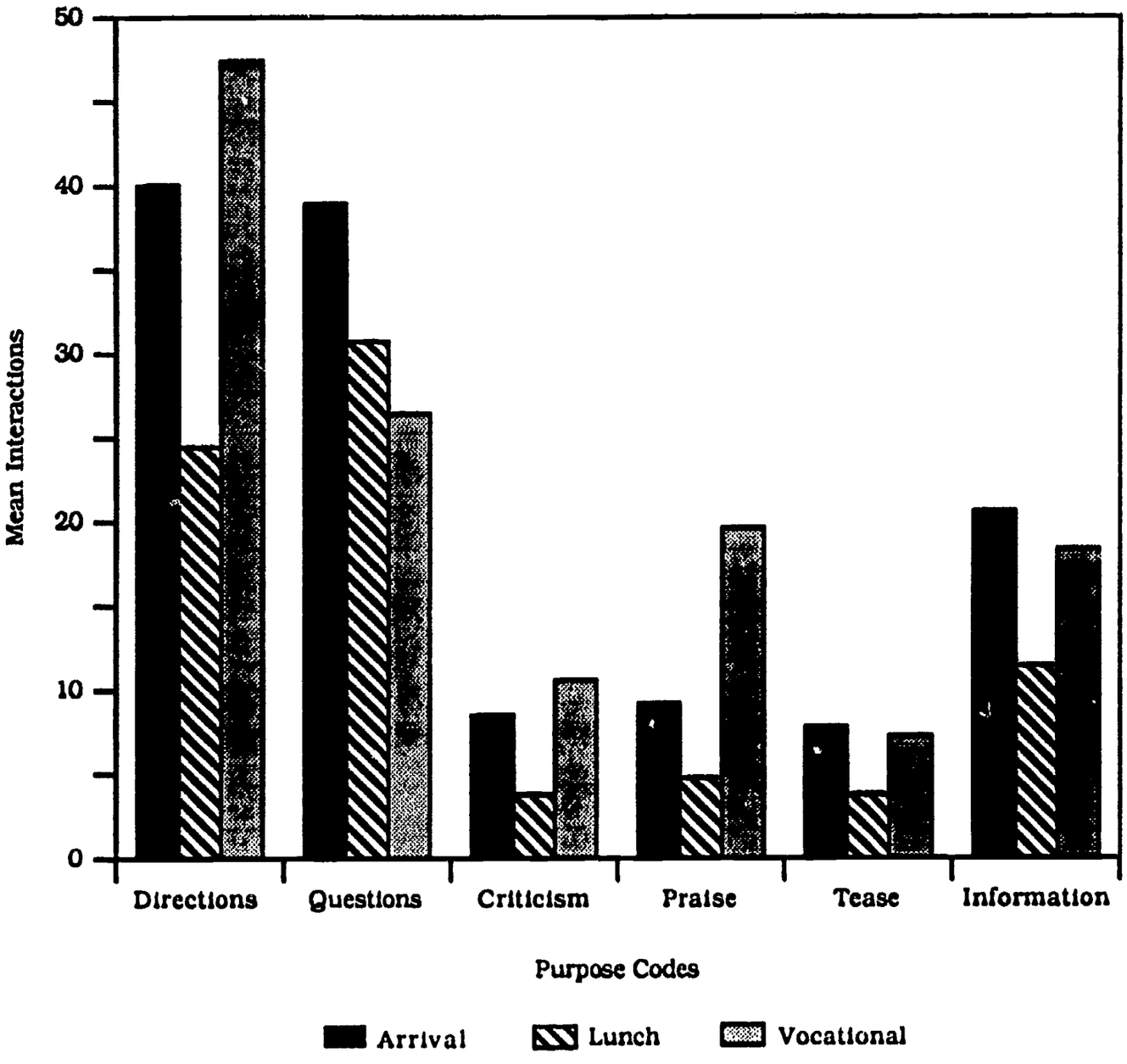


Figure 1. Purpose of Interactions Across Each Condition by Mean of Occurrence.

A similar interaction pattern occurred among the students when they were involved in vocational training; that is, the most frequently occurring interactions were directions and questions. Most of the directions and questions were instructional in nature, involved task-related topics, and were initiated by teachers. The following example, which spanned approximately 2 minutes and was taken from a student in training at a cable company is illustrative of these interactions.

> The teacher says, "Put the wires down." S looks at the teacher. The teacher says, "Stop messing around." S smiles. The teacher leaves. Another teacher says, "S, put the wires down, not up." S puts the wires down. The other teacher looks at S and S pauses. The teacher says, "S, get busy." S starts working.

After directions and questions, students were involved in interactions that involved information ($\underline{M}$ = 18.1), praise ($\underline{M}$ = 18.0), and criticism ($\underline{M}$ = 10.5). Again, these types of interactions were instructional, initiated by teachers, and related to the work being trained.

Teacher Ratings

The teachers indicated that the majority of their students seldom initiated interactions with teachers or peers. These perceptions of the teachers were corroborated by the results from the direct observations. Upon direct observation, students were observed to initiate only 4% of all of the interactions in which they were involved.

However, the teachers indicated that many of the students frequently responded to interactions initiated by the teachers. The students received an average rating of 3.6 (on a scale from 1 - 5) on responding appropriately to interactions, a rating of 3.4 on responding to greetings, 3.5 on responding to questions, 3.8 for following directions, 3.7 for helping when asked, and 4.7 for accepting physical contact. These ratings suggest that students were "sometimes" or "often" likely to respond to a variety of interactions initiated by teachers. Upon direct observation, the results indicated that students responded to teachers directions 65% of the time, responded to their questions 64% of the time, and responded to greetings 56% of the time. If we use 50% responding as a behavior that "sometimes" occurs, it

appears that teachers have a fairly accurate perception of how students are responding to their interactions.

Interestingly, teachers indicated that students seldom ($\underline{M} = 2.3$) made sounds (e.g., screaming, singing) or displayed motor behaviors (e.g., flapping hands, masturbating) that disturbed others. Upon direct observation, students were observed to emit these types of behavior a total of 372 times, or each student (on the average) emitted some type of bizarre behavior once every 2 minutes. From the observational data, it could be said that these types of behaviors were occurring more than teachers perceived they were occurring.

Parent Interviews

Telephone interviews were conducted with six parents, two guardians, and one brother of a student; one parent chose not to participate in the interview. Results of these interviews indicated that although 9 of the 10 respondents were very pleased with the school program, only 4 individuals believed that what their children were learning in school would prepare them for work. One respondent indicated that "sorting silverware would not be a real job" and another person responded that "S will not have enough skills to get a job; it is hard to see progress."

All but two individuals stated that they wanted their son/daughter to work in an integrated employment setting, and three parents mentioned jobs that they hoped their son/daughter would have when they graduated from school: working at a cable TV company, doing something clerical, and working in the computer industry. Five of the nine parents/guardians indicated that they were anxious and unsure of what was going to happen to their children after they graduated from high school.

Several questions were asked regarding the students' friends. One question probed parents'/guardians' feelings about the peers who went to school with the students. Four of the respondents were noncommittal in responding to this question, making such comments as "I haven't had much of an opportunity to interact with them" and "I don't have a good feel for them." Three respondents said the other classmates were O.K., one said

that she wished they were more age appropriate and that there were more opportunities to interact with nonhandicapped peers, and one parent indicated the peers were boring because they were handicapped.

Seven of the nine respondents answered a question about seeing classmates after school. No school classmates had ever been to the students' homes after school, and none of the students had invited any of their classmates to their home.

Seven of the nine parents/guardians indicated that their children did not have a lot of friends and that they rarely interacted with their friends. Six of the nine parents/guardians stated that they wished their son/daughter had more friends; one parent had no concerns over this issue, one parent did not respond, and one indicated that he was not sure this was a possibility.

Discussion

In this study, the social interactions displayed by a group of secondary-aged students with severe handicaps were directly observed using narrative recording procedures. Students were observed during three social contexts—when they arrived at school, during lunch, and when they were engaged in vocational training. The results of the study were analyzed descriptively and suggest several areas that have implications for facilitating the transition from school to work.

When students were observed across all three contexts, they were involved primarily in task-related interactions, or interactions that were about school or vocational tasks. This finding is not surprising, because we would expect that most interactions in school would be instructional in nature. In employment settings, however, workers not only interact about work-related matters, but they also interact frequently about non-task matters, e.g., the weather, sports, and cars (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft et al., 1988). Additionally, Chadsey-Rusch and Gonzalez found that non-task interactions occurred throughout work periods, and predominated the types of interactions displayed upon arrival to work and lunch. Because non-task interactions seem to occur frequently in

employment contexts, it makes sense that youth of transition age should have frequent opportunities to be involved in similar interactions of this type. Students of transition age should also be taught to respond appropriately to questions, information, and teasing and joking about non-task topics. These types of interactions can easily be initiated by teachers throughout the course of a student's day; that is, teachers can initiate more conversations about the weather, clothes, cars, family, and current events. Because non-task interactions, particularly those that are nondirected, may be regarded by students as more pleasant than task-related interactions, their responsiveness level may increase (Peck, 1985); additional research is needed to verify this hypothesis.

As discussed, task-related interactions were predominant throughout all observational conditions for the students. Interestingly, when one looks at the purpose of interactions across conditions, the same pattern predominates. Students were involved primarily in task-related interactions in which the purpose was to direct, question, or provide information. Although this result is not too surprising for the arrival and vocational conditions where instructional programs were frequent, it is a surprising finding for the lunch condition. Mealtimes should be social times (Morris, 1987). Unfortunately, few teachers were observed talking with the students about non-task topics; instead, most interactions involved directions, questions, and information related to feeding or lunch programs. This finding should not suggest that these types of programs should be discontinued, but it may be appropriate to establish a balance between task and non-task interactions during lunch, especially when one considers that nonhandicapped workers rarely engage in task-related interactions during lunch (Chadsey-Rusch & Gonzalez, 1988, Lignugaris/Kraft et al., 1986, 1988).

The results of this study also indicated that when students with severe handicaps were in vocational contexts, they received even more directions, praise, and criticism than when they were in arrival and lunch contexts. One implication of this finding is that students were dependent on cues and reinforcement from the environment in order to complete

their work tasks. If students are going to function as independently as possible in employment settings, they need to be less dependent on contrived or extra cues and feedback from others. In the present study, students had been on their jobs for a minimum of nine months and were judged to be in the fluency and maintenance stages of learning. As teachers prepare students for jobs, they may need to make more of a systematic effort to withdraw their instructional support so that students are working as independently as possible. This should not suggest that support be unavailable, particularly when ongoing support is a component of the supported work model, but it should suggest that teachers need to work toward enabling their students to be more independent on the job by the time they graduate from high school.

A final factor in the narrative data concerns the direction of the interactions. When these students were at school, they were involved in very few interactions with their peers, particularly nonhandicapped peers. The low rates of peer interactions may have occurred because junior high school students wouldn't typically interact with any 18-22 year olds at school, or the low rates may have occurred because the students were influenced by observer presence and did not display their "normal" rates of social interactions. However, students should have been somewhat used to an adult presence because teachers were generally in close proximity to the students with handicaps. Foster and Cone (1986) pointed out that only 34% of the behaviors observed across 19 studies that they reviewed appeared to have been affected by observer presence. It is clear that more research is needed to document the precise effects of observer reactivity.

That there were few interactions with nonhandicapped students is understandable, in part, because most of the student instruction took place outside of school where there was little access to school peers; this point seems to warrant further discussion. Several individuals (Hanley-Maxwell, 1986; Rusch & Chadsey-Rusch, 1985; Wehman, Renzaglia, & Bates, 1985) have recommended that employment training settings should be established for students with handicaps when they are 12 or older. As students age and spend more of

their school day in employment sites, their "peers" are their co-workers, many of whom will not be the same age. Consequently, when youth are of transition age it becomes difficult to promote interactions with the chronological-age peers because there are fewer physical opportunities. Although we want to provide opportunities for interactions with school peers, we also want to make certain that youth are prepared for adult life. Perhaps more concerted efforts need to be made to involve youth of transition age in after-school activities with same-age peers (Brown et al., 1989), and efforts also should be made to increase interactions with co-workers because research has indicated that friendships can and do occur between people of different age groups (Pogrebin, 1987).

The teachers involved in this study had fairly accurate perceptions of the social skills displayed by their students. The only area where the teachers may have underestimated the frequency of occurrence was in the area of bizarre or inappropriate behavior. Efforts need to be made to reduce the frequency of inappropriate behaviors, particularly as students approach transition age. This is crucial because individuals with handicaps often lose their jobs as a result of inappropriate social behaviors (e.g., Brickey et al., 1985; Greenspan & Shoultz, 1981).

Parents and guardians were concerned that their children had few friends and would be unable to get jobs after graduation. It is possible that parents had limited information about the social contacts at school and also lacked knowledge about different employment options available. As students near graduation age, teachers need to provide parents with information about employment options and need to involve them in planning for their children's future (Seyfarth, Hill, Orelove, McMillan & Wehman, 1987; Wehman, Moon, Everson, Wood, & Barcus, 1988). Also, parents need to know that work settings are places where friendships develop (Pogrebin, 1987; Zetlin & Murtagh, 1988), but that systematic efforts will probably be needed to facilitate interactions between persons with and without handicaps (Chadsey-Rusch, 1990).

The information derived from this research can be considered as a first step in describing the social interaction patterns of transition-age students with severe handicaps, however, there are limitations to the generalizations that can be made. First, the size of the sample of students observed was small, and there is no guarantee that these students' interactions are typical of other students' interactions. Second, the teacher rating scale and parent interview questions were developed specifically for this study—there is no psychometric information available on these particular measures, so the results from the teachers and parents need to be interpreted cautiously.

Finally, few observational studies of this type have used narrative records as a method to collect data. In particular, this method makes it difficult to assess the reliability of the dependent variables, and this in combination with the complexity of the code may account for some of the variability in the interobserver and intercoder scores. For intercoder agreement, particularly with respect to the purpose codes, mean agreement scores ranged from 100% (greeting and praise) to 50% (criticism). The reliability scores for criticism may have been low because few instances of criticism occurred. Although narrative recordings capture the "richness" of behavior in context, they may also contribute to lower reliability scores because they encompass low frequency events that might not be included in a priori coding systems.

It is also possible that the reliability procedures used in this study contributed to the variability of agreement scores because the procedures, particularly interobserver, may not have been well suited to measure the "true" reliability of the data. Although different reliability procedures have been suggested by qualitative researchers (LeCompete & Goetz, 1982), no standard exists. The reliability procedures used in this investigation are typically applied to direct observational research using a priori codes. Although such procedures are uncommon in qualitative research, it seems that their application may enhance the reliability of the results of qualitative methods; further analysis of appropriate reliability procedures for qualitative methods is warranted.

In summary, this investigation found that secondary-aged students with severe handicaps were engaged in more interactions with teachers than peers about task-related rather than non-task-related interactions during arrival to school, lunch, and vocational training. Based on these interaction patterns, recommendations were made which would facilitate the transition from school to work. These recommendations included: (a) increasing interactions with nonhandicapped students and co-workers, (b) increasing the frequency of non-task interactions, (c) decreasing the frequency of directions and praise in vocational training settings, and (d) enhancing parental expectations about future employment and friendship possibilities.

Note

The author extends her thanks to the students and staff (Vicki James, Vannia Hannah, and Joan Fortschneider) for their willingness to be involved in this project. Special thanks are also extended to Pat Gonzalez for her ideas and support, and to Lana Collet-Klingenberg for her assistance in data collection and analysis.

[1]A copy of this material as well as the parent interview questionnaire can be obtained by writing to the author of this article.

References

Brickey, M. P., Campbell, K. M., & Browning, L. J. (1985). A five-year follow-up of sheltered workshop employees placed in competitive jobs. Mental Retardation, 23, 67-73.

Brown, L., Long, E., Udvarisolner, A., Davis, L., van Deventer, P., Ahlgren, C., Johnson, F., Gruenewald, L., & Jorgensen, J. (1989). The home school: Why students with severe intellectual disabilities must attend the schools of their brothers, sisters, friends, and neighbors. The Journal of the Association for Persons with Severe Handicaps, 14, 1-7.

Brown, L., Pumpian, I., Baumgart, D., Vandeventer, P., Ford, A., Nisbet, J., & Gruenewald, L. (1981). Longitudinal transition plans in programs for severely handicapped students. Exceptional Children, 47, 624-630.

Chadsey-Rusch, J. (1990). Teaching social skills on the job. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 161-180). Sycamore, IL: Sycamore Publishing Company.

Chadsey-Rusch, J., & Gonzalez, P. (1988). Social ecology of the workplace: Employer's perceptions versus direct observation. Research in Developmental Disabilities, 9, 229-245.

Chadsey-Rusch, J., Gonzalez, P., Tines, J., & Johnson, J. (1989). Social ecology of the workplace: An examination of contextual variables affecting the social interactions of employees with and without mental retardation. American Journal on Mental Retardation, 94, 141-151.

Edgar, E., & Levine, P. (1988, January). A longitudinal study of graduates of special education. Interchange, 3-5.

Foster, S. L., & Cone, J. D. (1986). Design and use of direct observation procedures. In A. R. Ciminero, K. S. Calhoun, & H. E. Adam (Eds.), Handbook of behavioral assessment (2nd ed.) (pp. 253-324). New York: John Wiley.

Greenspan, S., & Shoultz, B. (1981). Why mentally retarded adults lose their jobs. Applied Research in Mental Retardation, 2(1), 23-38.

Hanley-Maxwell, C. (1986). Curriculum development. In F. R. Rusch (Ed.), Competitive employment issues and strategies. Baltimore: Paul H. Brookes.

Hanley-Maxwell, C., Rusch, F. R., Chadsey-Rusch, J., & Renzaglia, A. (1986). Factors contributing to job terminations. The Journal of the Association for Persons with Severe Handicaps, 11, 45-52.

Hasazi, S. B., Gordon, R., & Roe, C. A. (1985). Factors associated with the employment status of handicapped youth exiting high school from 1979 to 1983. Exceptional Children, 51, 455-473.

Kirmeyer, S. L. (1988). Observed communication in the workplace: Content, source, and direction. Journal of Community Psychology, 16, 175-187.

LeCompete, M. D., & Goetz, J. P. (1982). Problems of reliability and validity in ethnographic research. Review of Educational Research, 52(1), 31-60.

Lignugaris/Kraft, B., Rule, S., Salzberg, C. L., & Stowitschek, J. J. (1986). Social interpersonal skills of handicapped and nonhandicapped adults at work. Journal of Employment Counseling, 23, 20-30.

Lignugaris/Kraft, B., Salzberg, C. L., Rule, S., & Stowitschek, J. J. (1988). Social-vocational skills of workers with and without mental retardation in two community employment sites. Mental Retardation, 26, 297-305.

Mithaug, D. E., Horiuchi, C. N., & Fanning, P. N. (1985). A report on the Colorado statewide follow-up survey of special education students. Exceptional Children, 51, 397-404.

Morris, S. E. (1987). Pre-feeding skills. Tucson, AZ: Communication Skill Builders.

Peck, C. A. (1985). Increasing opportunities for social control by children with autism and severe handicaps: Effects on student behavior and perceived classroom climate. The Journal of the Association for Persons with Severe Handicaps, 10, 183-193.

Pogrebin, L. C. (1987). Among friends. New York: McGraw-Hill.

Rusch, F. R. (Ed.). (1986). Competitive employment issues and strategies. Baltimore: Paul H. Brookes.

Rusch, F. R., & Chadsey-Rusch, J. (1985). Employment for persons with severe handicaps: Curriculum development and coordination of services. Focus on Exceptional Children, 17, 1-8.

Rusch, F. R., & Phelps, L. A. (1987). Secondary special education and transition from school to work: A national priority. Exceptional Children, 53, 487-492.

Rusch, F. R., Schutz, R. P., & Agran, M. (1982). Validating entry-level survival skills for service occupations: Implications for curriculum development. Journal of the Association for Persons with Severe Handicaps, 7, 32-41.

Salzberg, C. L., Agran, M., & Lignugaris/Kraft, B. (1986). Behaviors that contribute to entry-level employment: A profile of five jobs. Applied Research in Mental Retardation, 7, 299-314.

Schoggen, P. (1978). Ecological psychology and mental retardation. In G. P. Sackett (Ed.), Observing behavior vol. I: Theory and applications in mental retardation (pp. 33-62). Baltimore: University Park Press.

Seyfarth, J., Hill, J., Orelove, F., McMillan, J., & Wehman, P. (1987). Factors influencing parents' vocational aspirations for their children with mental retardation. Mental Retardation, 25, 357-362.

Snell, M. (1987). Systematic instruction of persons with severe handicaps (3rd ed). Columbus, OH: Charles E. Merrill.

Vogelsberg, R. T. (1986). Competitive employment in Vermont. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 35-49). Baltimore: Paul H. Brookes.

Wehman, P. (1986). Competitive employment in Virginia. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 23-33). Baltimore: Paul H. Brookes.

Wehman, P., Kregel, J., & Barcus, J. M. (1985). From school to work: A vocational transition model for handicapped students. Exceptional Children, 52, 25-37.

Wehman, P., Moon, M. S., Everson, J., Wood, W., & Barcus, J. M. (1988). Transition from school to work: New challenges for youth with severe disabilities. Baltimore: Paul H. Brookes.

Wehman, P., Renzaglia, A., & Bates, P. (1985). Functional living skills for moderately and severely handicapped adults. Austin, TX: PRO-ED.

Zetlin, A. G., & Murtaugh, M. (1988). Friendship patterns of mildly learning handicapped and nonhandicapped high school students. American Journal of Mental Retardation, 92, 447-454.

An Analysis of the Reasons for Job Separations in Relation to Disability, Placement, Job Type, and Length of Employment

Thomas R. Lagomarcino and Frank R. Rusch

Greenspan and Shoultz (1981) introduced a conceptual framework for analyzing the reasons why persons with disabilities separate from their jobs. This framework identified three categories of social factors (temperament, character, and social awareness), two categories of production factors (quantity and quality of work), and health factors. Their study, which reported on the primary reasons for involuntary termination from competitive employment for 30 individuals with mild to moderate mental retardation, found that social incompetence was at least as important a cause of job failure as poor production. Two additional job separation studies utilized the same conceptual framework in their analyses. Hanley-Maxwell, Rusch, Chadsey-Rusch, and Renzaglia (1986) reported similar findings in their investigation of factors contributing to the job terminations of 51 adults with disabilities. Martin, Rusch, Lagomarcino, and Chadsey-Rusch (1986) extended these earlier studies by comparing the terminations of food service employees with and without mental retardation. They found no significant differences between the two groups, with social and production problems contributing almost equally to job terminations for both groups.

Hill, Wehman, Hill, and Goodall (1986) examined 107 reasons given for job separation of persons with mental retardation. In contrast to previous studies, they examined the primary reasons for job separation according to employee-related and externally related attributions. The results indicated that persons with higher IQ scores (in the mid 50s) tended to be "actors" who frequently caused their own job separations because of skill or behavioral deficits. In addition, this group experienced significantly more separations resulting from behaviors related to poor work attitudes (e.g., poor attendance, not wanting

to work), in contrast to persons with lower IQ scores (in the mid 40s), who separated from their jobs primarily because of external factors, including the economic situation of the employer and parental interference.

Most recently, Hanley-Maxwell (1989) studied the relationship between length of time on the job and reasons for job terminations. Results indicated that although there was no relationship between reasons given and length of time on the job, participants lost their jobs most often within the first year of employment. Hanley-Maxwell (1989) questioned the quality of long-term, follow-up services and suggested that these services needed to remain in place well after the initial training period (typically, from two weeks to two months).

This investigation sought to extend existing research by addressing the extent to which persons with disabilities separated from their jobs because of type of placement model (e.g., individual versus group), type of job (e.g., janitorial/maintenance versus food services), and job tenure. We also studied level of disability as a factor in relation to placement model, job type, and tenure. Unique to our investigation was our attempt to determine if there were any significant differences among these same variables (i.e., type of placement type of job, and job tenure) and positive changes in job status.

Method

Subjects and Settings

The subject pool consisted of individuals who were placed into supported employment and separated from their jobs between February 1, 1986 and June 30, 1989. A total of 380 supported employees were identified as separating from 411 jobs. The supported employees ranged in age from 16 to 66 years of age, with an average age of 31 years. The majority of the supported employees had mental retardation as their primary disability (n = 247). The average IQ score of these individuals was 62 (range = 17 to 75). The remaining supported employees were persons with psychiatric disabilities (n = 68) or physical or sensory impairments (n = 65). Table 1 overviews the demographic and employment setting characteristics of the sample.

Table 1

Demographics and Employment Setting Characteristics of Persons Separated from Supported Employment (N = 380)

Average age	32
Average IQ score	62
Disability categories	
Mild mental retardation (IQ = 55-75)	166
Moderate mental retardation (IQ = 40-54)	56
Severe/profound mental retardation (IQ = 0-39)	25
Psychiatric disabilities	68
Other	65
Gender	
Male	247
Female	132
Previous placement	
Sheltered employment	121
Work activity	72
Work adjustment training	60
School	30
Competitive employment/supported employment	44
Other	53
Average job tenure (months)	8
Placement type	
Individual	193
Cluster or group placement	202
Mobile crew	16
Job type	
Janitorial/maintenance	141
Food service	101
Light industrial	97
Other	72

Sixty-seven percent (n = 253) of the supported employees had previously been served in day programs funded by state social service agencies, with the majority referred from sheltered workshops (n = 121) before their placement in supported employment.

The sample included 202 persons who were individually placed, 193 placed in clustered or group placements, and 16 who worked as part of a mobile crew. The placements covered a variety of occupational areas including janitorial positions (n = 141), food service (n = 101), light industrial (n = 97), and other (n = 72). The majority of the jobs in the "other" category consisted of clerical, health care, or laundry positions. The average length of employment was 8 months (range = 1 to 26 months).

Data for this investigation were obtained from the Illinois Data Management and Information System (Ellis, Rusch, Tu, & McCaughrin, 1990). This information system is maintained by the Illinois Supported Employment Project, which is located at the University of Illinois at Urbana-Champaign. The Illinois Supported Employment Project provides on-site technical assistance to model programs throughout the state of Illinois. Further, these model programs submit data to the University of Illinois on a regular basis.

Data Collection Procedures

In establishing the information system, several steps were taken to ensure accuracy and timeliness in reporting data. First, instructions accompanied each form requesting that the form be completed by the employment specialist primarily responsible for providing post-placement, long-term follow-up. Second, all employment specialists attended a total of three two-day workshops in which they were trained to collect data. Third, all employment specialists were provided with at least two on-site visits which included technical assistance in data collection and program evaluation by staff members of the University of Illinois. Two data sources were utilized for this study: supported employee characteristics and job separation.

Supported employee characteristics (Worker Characteristics Form). The Worker Characteristics Form is completed for each individual who enters a supported employment

program. The form requests demographic and assessment information as well as information about living arrangements, previous employment, current employment, hours employed, type of placement, method of transportation, and previous education.

Job separation. When a change in employment occurs, a Job Separation Form is completed. Twenty-seven reasons for job separation were identified based on descriptors used in previous job separation studies (Greenspan & Shoultz, 1981; Hanley-Maxwell et al., 1986; Hill et al., 1986). The person completing the form was instructed to identify the primary reason for job separation based on their knowledge of the supported employee and the job site. Because of the specialist's affiliation with the employee, the specialist also was allowed access to information typically filed by the employer to substantiate the dismissal or reason for separation. The form also required the employment specialist to indicate: (a) the date that the job separation occurred, (b) the type of job, and (c) a brief description of what happened to the individual after the job separation.

Reliability

Sixty-two job separations (15%) were randomly selected from the sample for purposes of collecting reliability data. A letter was sent to each of the supported employment programs that had provided follow-up services to the individuals in the subsample. A second Job Separation Form was sent to the program coordinators of the respective programs; this form included the worker number, place of employment, date of job separation, and the name of the person completing the first form. A cover letter instructed the program coordinator to identify a second individual (e.g., employment specialist, program coordinator) familiar with the job separation and to have this second person indicate the primary reason for job separation on the enclosed form. If a second person was not familiar with the case, the original employment specialist was asked to complete the form. Persons completing the form were instructed to do so without referring to the original job separation form; however, they were allowed to review employment specialist notes that described the work

situation which may have led to the specific job separation. Each letter was followed by a telephone call to answer any questions about the instructions.

Fifty-four of the 62 reliability job separation forms were completed, reflecting 13% of the total job separation sample. A reliability coefficient of .89 was obtained for reasons given, which was calculated by dividing the number of agreements (n = 48) by the total number of agreements plus disagreements.

Job Separation Categories

For analysis, the 27 reasons listed on the Job Separation Form were divided into seven major categories: (a) lack of job responsibility, (b) task production, (c) social-vocational behavior, (d) economy, (e) health, (f) change in job status, and (g) other external factors (Lagomarcino, 1990). Lack of job responsibility referred to employees who had poor attendance, poor work attitudes, or lacked motivation to work. Task production referred to employees who worked too slowly, required continual prompting to complete job assignments, or whose work quality was poor. Social-vocational behavior included insubordinate behavior, maladaptive behavior, and poor social skills. Economy referred to separations resulting from adverse economic conditions that affect employees both with and without disabilities. Medical/health referred to physical problems that restricted work activity and to hospitalizations that resulted from the recurrence of symptoms related to specific psychiatric disabilities. Change of job status referred to a positive change in the employment status of the employee (e.g., took a better job, no longer needed support services). Other external factors referred to job separations that may have occurred because of something beyond the direct control of the employee (e.g., parents did not support the employment, employee moved away, financial aid was threatened). Table 2 provides a complete listing by category of the reasons for job separation.

Data Analysis

Two-way chi-square analysis procedures were used to determine if there were significant differences in the reasons stated for job separations among disability groups, types of

Table 2

Primary Reasons for Job Separation by Category

Lack of Job Responsibility
Does not want to work
Poor attendance/tardy
Poor work attitude
Criminal behavior
Task Production
Low quality work
Work rate too slow
Continual prompting required
Social-Vocational Behavior
Poor social skills
Insubordinate behavior
Poor appearance
Maladaptive behavior
Economy
Economic situation of employer
Seasonal layoff
Health
Medical restriction
Rehospitalization
Other External Factors
Transportation
Parent/guardian initiated
Financial aid threatened
Moved away
Program terminated
Retired

placements, types of jobs, and job tenure. In addition, one-way chi-square analysis procedures were used to determine if there were any significant differences among these same variables and positive changes in job status.

Results

The results of this study are reported in two sections. The first section reports on those reasons given for negative job separations. The second section reported the results of job separations that typically resulted in an improvement in the employee's working situation.

Reasons for Negative Job Separation

Disability group. Because of the small number of individuals represented by other disability groups, chi-square analysis procedures were used to examine only three major disability groups: (a) mild mental retardation, (b) moderate, severe, or profound mental retardation, and (c) psychiatric disabilities. The results were significant, X^2 (10, n = 278) = 27.30, $P \leq .01$.

Health-related reasons contributed to more job separations of persons with psychiatric disabilities and persons with moderate to profound mental retardation than any other reason. Lack of job responsibility and social-vocational behavior were the primary reasons reported for job separation among persons with mild retardation but also were major contributing factors for persons with psychiatric disabilities. Results also indicated that economic layoffs affected persons with moderate to profound mental retardation and persons with psychiatric disabilities more than persons with mild mental retardation.

Type of placement. There were no significant differences between the three types of placements (i.e., individual, group, mobile crew) and reasons for job separation.

Type of job. Results indicated significant differences in reasons for job separation among light industrial, janitorial/maintenance, food service, and other occupational areas, X^2 (15, n = 332) - 26.44, $P \leq .05$. Poor production was the primary reason for job separation among employees in janitorial/maintenance and food service occupations and was also a contributing factor for those in light-industrial jobs. However, health was the major reason

for job separation among supported employees in light-industrial positions. In addition, light industrial employees were affected more by economic layoffs than any other occupational area.

Job tenure. Results of the chi-square analysis indicated significant differences in reasons for job separation for those employed for up to six months as compared to those employees who were employed for seven months or more, X^2 (15, n = 319) = 27.53, $P \leq .05$. Although production and economy were cited as the primary reasons for job separation for both groups, lack of job responsibility and social-vocational behavior problems were experienced more by individuals employed for seven months or longer.

Positive Reasons for Job Separations

Disability group. The results of a one-way chi-square analysis indicated that persons with mild mental retardation experienced significantly more positive changes in job status than persons with moderate to profound mental retardation (19.61, $P \leq .0001$) or persons with psychiatric disabilities (10.29, $P \leq .0001$).

Types of placement. The results of a one-way chi-square analysis indicated that there were significant differences in changes in job status among the three types of placements. Further analysis showed that persons in individual placements experienced more positive job separations than persons in group placements (3.17, $P \leq .10$) or mobile crews (37.36, $P \leq .0001$) In addition, employees in group placements experienced more positive changes in job status than persons in mobile crews (22.53, $P \leq .0001$).

Type of job. Results of our one-way chi-square analysis indicated that changes in job status were more likely to occur for persons in janitorial/maintenance positions or food service positions than persons employed in light industrial jobs.

Job tenure. The results of a one-way chi-square analysis indicated no significant differences in changes in job status for persons who were employed one to six months versus those employed for seven months or longer.

Discussion

The results of our investigation of why persons with disabilities separate from their jobs extend the existing literature in several important ways. Further, our analysis of positive reasons for job separations is unique to the literature. This investigation suggests that health- and economic-related reasons contribute to more job separations among persons with moderate, severe, or profound mental retardation and psychiatric disabilities; lack of job responsibility and social-vocational behavior were reasons reported most often for persons with mild mental retardation. Although previous investigations have analyzed reasons for job separation (Hanley-Maxwell, 1989; Hanley-Maxwell et al., 1986), only Hill et al. (1986) differentiated reasons in relation to disability. To date the present investigation is the only study of why persons with psychiatric disabilities separate from their jobs in supported employment.

Recently, group placements have been criticized by Brown, Udarvi-Solner, Long, Davis, Ahlgren, VanDeventer, and Jorgensen (in press) for a number of reasons, including the possibility that persons with disabilities may not possess the opportunities to interact with nondisabled co-workers and they may be stigmatized by their co-workers and supervisors and consequently not be provided with opportunities to enhance their employment status. The results of the current investigation suggest that persons with disabilities do not separate more often in relation to whether they are employed individually, in clusters, or as a member of a work crew. However, results suggest that persons with mild mental retardation who are individually placed separate from their jobs to find better paying jobs or to move to new geographic locations and work.

Supported employees separated from light-industrial jobs for production, health, and economy reasons. Production-related reasons also related to employee separations from food service and janitorial-maintenance jobs. Ford, Dineen, and Hall (1985) reported that food service workers appeared to separate from their jobs for production reasons.

Several studies have reported that social-related and production-related reasons contribute to job separations (cf. Lagomarcino, 1990). This investigation suggests that supported employees are more likely to separate from their jobs for production-related and economic factors within six months of placement. Beyond the six-month period, social-related reasons seem to account for more separations (i.e., lack of responsibility and social vocational behavior). Interestingly, Hanley-Maxwell (1989) reported no relation between length of job tenure and reasons for job terminations. However, she did note that 38% of all terminations resulted from poor social behavior and an additional 36% were associated with reasons that included poor social behavior. As noted by Hanley-Maxwell (1989) and the current investigation, social problems that persist over time likely will contribute to reasons given for terminations and separations. Regardless of disability level, type of placement, and type of job, it may be that individuals who are terminated within the initial days or weeks of placement may be terminated because they cannot get the job done, whereas if a person lacks social competence, he or she may lose a job after several weeks or months of placement.

Two additional findings are worthy of discussion. In this investigation we found that persons with mild mental retardation separated significantly more than did persons with all other disabilities in the sample. Although length of job tenure and placement model were not significant factors, a significant job-type relationship was found to exist. Specifically, janitors, maintenance personnel, and food services workers with mild mental retardation separated more often than did employees with other disabilities in these jobs. These results are not surprising; youth and minority groups have been found to enter the job market through any one of the job types studied, especially janitorial/maintenance and food services positions (Wool, 1976). Young adults with mid mental retardation appear to utilize the placement and job training services supported employment provide (cf. Trach, 1990).

At least two questions seem worthy of future study as a result of these job separation findings. First, it seems that persons with mild mental retardation are separating from their jobs at rates higher than almost all other disability groups we studied, with the exception of employees with psychiatric disabilities and moderate-severe-profound mental retardation (for health and economic reasons). Preliminary findings of our ongoing benefit-cost analyses of supported employment suggest that costs associated with persons with mild mental retardation are significantly higher than the benefits accrued (McCaughrin, Conley, Rusch, & Tines, 1990). The initial high cost of placement and training is reduced when an employee remains employed for at least nine months or longer. Our research suggests that costs associated with follow-up support services are less than those associated with placement job training. Similar findings have been reported by Kregel, Wehman, Revell, and Hill (1990).

Second, health-related job separation was found to be significant among persons with psychiatric disabilities and moderate-severe-profound mental retardation. Future research must begin to explore which methods must be considered to retain the employment of these disability populations. These methods, in turn, must then become the focus of personnel preparation programs that are focused upon teaching employment and transition specialists (cf. Renzaglia & Everson, 1990; Winking, Trach, Rusch, & Tines, 1989).

In summary, this investigation found that level of disability, type of job, and length of employment all contributed to reasons given for the job separations of supported employees. Additionally, persons with mild disabilities separated from their jobs for positive reasons, typically finding a better paying job or relocating to a different part of the country. These positive separations, however, may contribute to lower benefit-cost ratios being realized by statewide supported employment demonstrations.

Note

The authors would like to thank Yee-Rong Lai and Tung Shan Pan for their help.

References

Brown, L., Udarvi-Solner, A., Long, E., Davis, L., Ahlgren, C., VanDeventer, P., & Jorgensen, J. (in press). Integrated work: A rejection of the segregated enclave and mobile work crew. In L. Meyer, C. A. Peck, & L. Brown (Eds.), Critical issues in the lives of people with severe disabilities. Baltimore: Paul H. Brookes.

Ellis, W., Rusch, F. R., Tu, J-J., & McCaughrin, W. (1990). Supported employment in Illinois. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 31-44). Sycamore, IL: Sycamore Publishing Company.

Ford, L., Dineen, J., & Hall, J. (1985). Is there life after placement? Education and Training of the Mentally Retarded, 19, 291-296.

Greenspan, S., & Shoultz, B. (1981). Why mentally retarded adults lose their jobs: Social competence as a factor in work adjustment. Applied Research in Mental Retardation, 2(1), 23-38.

Hanley-Maxwell, C. H. (1989). An analysis of job termination by length of time on the job for persons with severe disabilities in supported employment. Rehabilitation Counseling Bulletin, 33(2), 159-162.

Hanley-Maxwell, C. H., Rusch, F. R., Chadsey-Rusch, J., & Renzaglia, A. (1986). Reported factors contributing to job termination of individuals with severe disabilities. The Journal of the Association for Persons with Severe Handicaps, 1(1), 45-52.

Hill, J. W., Wehman, P., Hill, M., & Goodall, P. (1986). Differential reasons for job separation of previously employed persons with mental retardation. Mental Retardation, 24, 347-351.

Kregel, J., Wehman, P., Revell, G. W., & Hill, M. (1990). Supported employment in Virginia. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 15-29). Sycamore, IL: Sycamore Publishing Company.

Lagomarcino, T. R. (1990). Job separation issues in supported employment. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 301-316). Sycamore, IL: Sycamore Publishing Company.

Martin, J., Rusch, F. R., Lagomarcino, T. R., & Chadsey-Rusch, J. (1986). Comparison between nonhandicapped and mentally retarded workers: Why they lose their jobs. Applied Research in Mental Retardation, 7(4), 467-474.

McCaughrin, W., Conley, R. W., Rusch, F. R., & Tines, J. (1990). A benefit-cost analysis of supported employment in Illinois: The first two years. Unpublished manuscript.

Renzaglia, A., & Everson, J. M. (1990). Preparing personnel to meet the challenges of contemporary employment service alternatives. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 395-408). Sycamore, IL: Sycamore Publishing Company.

Trach, J. S. (1990). Supported employment characteristics. In F. R. Rusch (Ed.), Supported employment: Models, methods, and issues (pp. 65-86). Sycamore, IL: Sycamore Publishing Company.

Winking, D. L., Trach, J. S., Rusch, F. R., & Tines, J. (1989). Profile of Illinois supported employment specialists: An analysis of educational background, experience, and related employment variables. The Journal of the Association of Persons with Severe Handicaps, 14(4), 278-282.

Wool, H. (1976). The labor supply for lower level occupations (Research and Development Monograph, No. 42). Washington, DC: U.S. Department of Labor, Employment and Training Administration.

Co-worker Involvement Scoring Mar ual and Instrument

Frank R. Rusch, Carolyn Hughes, Jeff McNair, and Philip G. Wilson

The Co-worker Involvement Instrument allows employment training specialists and job supervisors to estimate co-worker involvement with employees (target employees) after job placement. This instrument is based upon research that assumes that co-worker involvement enhances job performance as a result of social interactions between target employees and their co-workers. Greater co-worker involvement in conjunction with employment training specialist (ETS) assistance, for example, may be associated with an increased likelihood of job retention, greater work productivity, and enhanced cost effectiveness of employee training methods.

The primary purpose of the Co-worker Involvement Instrument is to assess the extent to which co-wo·kers are involved with target employees at specific job placements. This instrument is a companion to the Co-worker Involvement Training Manual, which describes interventions for increasing co-worker involvement with target employees. This manual is available upon request from the first author. The Co-worker Involvement Instrument is designed to be used before and after co-worker intervention.

The Co-worker Involvement Instrument is designed to be used by employment training specialists (ETS) and job supervisors. Because co-workers tend to rate their peer's performance leniently (White & Rusch, 1983), employment training specialists or supervisors should conduct all interviews to obtain the information needed to complete the Co-worker Involvement Instrument. This instrument contains the following items.

1. Physical Integration
2. Social Integration
3. Training
4. Associating (frequency)
5. Associating (appropriateness)

6. Befriending
7. Advocating
8. Evaluating
9. Giving Information

A recent study of the psychometric properties of the Co-worker Involvement Instrument demonstrated good reliability. McNair and Rusch (1989) reported an interrater reliability coefficient of .80.

A test-retest reliability study found a correlation of r = .88. A total of 54 raters scored the Instrument two times separated by a time period of 9 days (mean). The comparison of the rating at Time 1 with that at Time 2 (9 days later) yielded the test-retest coefficient of .88.

Part 1: Co-Worker Involvement Scoring Manual

Supporting Research

The limited success demonstrated by sheltered workshops in providing meaningful employment opportunities to persons with handicaps has led to the development of alternative service-delivery models that "support" employment in integrated settings (Bellamy, Rhodes, Bourbeau, & Mank, 1986). Supported employment focuses upon "competitive work in an integrated work setting for individuals who, because of their handicaps, need ongoing support services to perform that work" (Federal Register, August 14, 1987, p. 30546). Supported employment also provides opportunities for persons with handicaps to interact with nonhandicapped employees. In fact, employment integration may be the distinguishing characteristic of supported employment (Chadsey-Rusch, 1986). Except for research reported by Chadsey-Rusch and Gonzalez (1988), we know very little about social interactions that occur between employees with and without handicaps. Chadsey-Rusch and Gonzalez (1988) suggest that employees with handicaps interact with co-workers and that the purpose of these interactions is to share information, tease and joke with others, and ask questions.

Supported employment also is distinguished by the "support" provided to target employees by their co-workers. Only recently, however, has this support been recognized as potentially important to the long-term employment of supported employees. Lagomarcino and Rusch (1988) and Rusch and Minch (1988) overviewed several studies whereby co-workers were taught to serve as change agents in competitive employment situations. For example, Rusch and Menchetti (1981) taught co-workers to deliver a verbal warning to a food service employee with moderate mental retardation who was failing to comply with requests made by supervisors, co-workers, and cooks. Co-workers also were taught to report the results of the intervention to follow-up support staff. The warnings positively affected the performance of the target employee. In fact, this target employee has remained in his

original job placement since 1978, which followed almost 17 years of state institutionalization.

Because of their consistent presence in the work environment, co-workers have been identified as a potentially powerful resource available to provide support to supported employees (Rusch, 1986; Rusch, Hughes, Johnson, & Minch, 1988; Rusch & Minch, 1988; Shafer, 1986). Based on their analysis of both business management and sociology of work literature, Nisbet and Hagner (in press) observe that considerable social interaction and support among co-workers are characteristic of natural work environments. These researchers conclude that promoting co-worker involvement as a natural support may be one means of providing consistent, ongoing follow-up services in integrated work settings.

Co-workers refer to employees who meet one or more of the following criteria: (a) work in the proximity of the supported employee, (b) perform the same or similar duties as the target employee, and (c) take breaks or eat meals in the same area as the target employee. Rusch and Minch (1988) identified five types of co-worker support that have been reported by applied researchers who have enlisted the involvement of co-workers. This involvement included: (a) validating instructional strategies (Rusch & Menchetti, 1981; Schutz, Rusch, & Lamson, 1979), (b) collecting subjective evaluations (Crouch, Rusch, & Karlan, 1984; Schutz, Jostes, Rusch, & Lamson, 1979; White & Rusch, 1983), (c) implementing training procedures (Kochany, Simpson, Hill, & Wehman, 1982; Rusch, Weithers, Menchetti, & Schutz, 1980; Stanford & Wehman, 1982), (d) collecting social comparison information (Crouch et al., 1984; Rusch, Morgan, Martin, Riva, & Agran, 1985), and (e) maintaining work performance after skill acquisition (Kochany et al., 1981; Rusch et al., 1985).

Rusch, Hughes, Johnson, and Minch (1988) extended the findings of Rusch and Minch (1988) by describing the type of co-worker involvement reported among target employees in model supported employment programs in Illinois. Findings indicated that the types of co-worker involvement that have been described in the literature exist in supported

employment settings. Specifically, Rusch et al. (1988) indicated that the greatest percentage of target employees had co-workers who served as associates (87%), followed by evaluators (70%), trainers (61%), advocates (42%), friends (20%), and data collectors (17%).

Subsequently, Rusch, Johnson, and Hughes (1990) described patterns of co-worker involvement in relation to placement approach. Specifically, this study sought to describe the type of co-worker involvement being reported by job coaches who place their target employees individually or in groups. Target employees who were employed in mobile work crews were much less involved with co-workers. Target employees who were individually placed or who worked in clusters were more involved with co-workers. Their findings indicated that supported employees associate extensively with their nonhandicapped co-workers when the opportunity for co-worker involvement exists.

In summary, supported employment has emerged as a major employment alternative for persons with handicaps. This employment alternative is characterized by the target employee earning a wage in a nonsheltered work setting, with support being provided to the target employee. Research conducted in natural work settings suggests that support may be provided by co-workers, as well as by the employment training specialists. Currently, co-worker involvement is being provided to supported employees in terms of associating, evaluating, training, advocating, befriending, and collecting data.

Glossary

Advocating — Co-worker advocates for target employees by optimizing, backing, and supporting the target employee's employment status. Optimizing refers to encouraging a supervisor to assign high-status and relevant tasks to the target employee, backing refers to supporting target employee's rights, for example, by attempting to prevent practical jokes aimed at the target employee. It also includes speaking up for the target employee or offering explanations during differences of opinion. Supporting relates to providing emotional support to the target employee, for example, in the form of friendship or association.

Associating — Co-worker interacts socially with the target employee at the work place.

Befriending — The co-worker interacts socially with target employee outside of the work place.

Clerical — Work related to processing information (e.g., file clerk, secretary, receptionist, typist, data processor) (Trach, Rusch, & DeStefano, 1987).

Cluster — A work situation where more than two target employees perform the same or similar work in the same location and where the target employees are provided ongoing supervision.

Cluster (dispersed) — A working situation where: (1) more than two target employees are working for the same employer but often perform the same or different job assignments in different locations, and (2) the target employees are provided ongoing supervision.

Comparable Work — Work that is performed by a co-worker that is the same or similar to work performed by the target employee.

Competitive Employment — Work that produces valued goods or services at a minimum wage or more and in a setting that includes nonhandicapped workers and provides opportunities for advancement (Rusch, 1986).

Co-worker Involvement — The co-worker interacts with a target employee either by training, associating, befriending, advocating, evaluating, or providing information to that target employee.

Co-workers — Employees who meet one or more of the following criteria: (a) work in the proximity of the target employee, (b) perform comparable work, and (c) have breaks or eat meals in the same area as the target employee.

Employment Training Specialists (ETS) (Job Coach) — An individual providing ongoing support services to the target employee throughout each step of the employment process, including job survey and development, job match, job placement, job maintenance, job-related services, and interagency collaboration. "Ongoing support services" means continuous or periodic job skill training services provided at least twice

monthly at the work site throughout the term of employment to enable the individual to perform the work. The term also includes other support services provided at or away from the work site, such as transportation, personal care services, and counseling to family members, if skill training services are also needed by and provided to, that individual at the work site" (Federal Register, 1987, p. 30551).

Employment Training Specialist (ETS) (Job Coach)/Co-worker Involvement — The ETS assists directly or indirectly in encouraging co-worker involvement that results in improved target employee performances.

Evaluating — A co-worker appraises a target employee's work performance and provides (written/oral) feedback to him/her.

Food Services — Work related to preparing and serving food to people in a restaurant setting (e.g., server, busperson, dishwasher) (Trach et al., 1987).

Giving Information -- The co-worker acts as a source of information by spontaneously volunteering instruction/feedback (regarding vocational skills, social skills, etc.) and in answering target employee's questions.

Health Care — Work related to the provision of health care services in a hospital, hospice, nursing home, or employee's residence (e.g., nurse's aide, bed stripper, recreation therapist's helper) (Trach et al., 1987).

Individual Placement — The placement of an individual into non-sheltered employment, typically without the presence of other workers with disabilities who perform the same job (e.g., dishwasher who works in a restaurant, janitor who works in a state office building) (Rusch, Trach, Winking, Tines, & Schutz, 1987).

Individualized Written Rehabilitation Plan (IWRP) — An Individualized Written Rehabilitation Plan outlines the services provided to individuals served in an employment program, including a description of the extended services needed, the identification of the state, federal, or private programs that will provide the continuing

support, and a description of the basis for determining that continuing support is available (Federal Register, 1987).

Integration — The extent to which the target employee has opportunities to interact with nonhandicapped co-workers. Integration has two aspects:

Physical Integration — The co-workers work, take breaks, and eat meals in the same areas at the same time as the target employee.

Social Integration — While completing his/her work, the target employee has an appropriate number of opportunities to interact with co-workers without negative effects on job performance.

Laundry — Work related to laundering of clothes or linens (e.g., towel machine operator, sheet ironer) (Trach et al., 1987).

Light Industrial — Work related to manufacturing a product or preparing a product for market (e.g., assembly benchwork, production line worker) (Trach et al., 1987).

Maintenance (janitorial and/or grounds) — Work related to improving or maintaining a building's appearance (e.g., janitor, maid, building repair person) and/or work related to maintaining grounds to be attractive, functional, and safe (e.g., lawn maintenance, gardening, leaf and snow removal, salting ice, removal of debris, trash collection, repair of sidewalks, painting) (Trach et al., 1987).

Mobile Crew Model — A situation where several individuals work together and perform a job at various community worksites (e.g., a janitorial crew) (Rusch et al., 1987).

Ongoing Support Services — See "Employment Training Specialist."

Retail — Work related to selling merchandise or services to consumers (e.g., clerk, gas station attendant, grocery bagger) (Trach et al., 1987).

Social Interaction — Events in which the target employee and co-worker are actively involved with each other are considered social interaction only when these events are appropriate within the context of the work place. Social interaction includes verbal

exchange, physical gestures that elicit a response, or physical contact (Chadsey-Rusch & Gonzalez, 1986).

Supervisor — Employee present at the job site who is responsible for the performance and evaluation of the target employee during his or her work shift.

Supported Employment — Paid employment which: (1) is for persons with disabilities for whom competitive employment at or above the minimum wage is unlikely and who because of their disabilities, need ongoing support to perform in a work setting, (2) is conducted in a variety of settings, particularly work sites in which persons without disabilities are employed, and (3) is supported by any activity needed to sustain paid work by persons with disabilities, including supervision, training, and transportation (Federal Register, 1984).

Target Employee — Individual who, because of the severity of a handicapping condition, cannot function independently in employment without intensive ongoing support services for the duration of their employment (Federal Register, 1987).

Training — The co-worker supports a target employee by providing on-the-job skill training.

Vocational Assessment and Curriculum Guide (VACG) — The VACG is a psychometrically validated behavior rating scale designed to provide measures of vocational and social skill competence in selected industries, including food services, janitorial services, and light industry. The VACG comprises eight skill domains including attendance/endurance, independence, production, learning behavior, communication social skills, and self-help skills (Menchetti & Rusch, 1988; Rusch, Schutz, Mithaug, Stewart, & Mar, 1982).

Warehouse — Work related to shipping and receiving goods (e.g., stocking, loading/unloading trucks, delivery person) (Trach et al., 1987).

Work Performance Evaluation Form (WPEF) — The WPEF is a questionnaire displaying many of the social and vocational skills that are of concern to employers, supervisors,

and co-workers. The WPEF was developed to provide employers and supervisors with a means of evaluating employee progress and communicating the evaluation results to placement trainers on a regular basis (Rusch & Mithaug, 1980; White & Rusch, 1983).

Instructions for Scorers

General Instructions

The Co-worker Involvement Instrument is designed to be scored by employment training specialists or supervisors who have worked in the target job site for a minimum of three months. It is assumed that employment training specialists and supervisors will have a high degree of familiarity with the job site, the target employee, and co-workers. The instrument itself contains nine items. Each item has three forced choices resulting in a score of 2, 1, or 0. Scoring procedures are similar for each item, and, in each case, items are scored on the basis of information gathered from relevant documents, observations, and/or verbal reports. Verbal reports may be solicited from the target employee, co-workers, supervisors, or employment training specialists. Co-workers may be identified as potential sources of verbal reports by asking the target employee who he/she talks to on the job.

Validation of Verbal Report

To be considered valid, the co-worker's or target employee's verbal report must be corroborated by either the target employee (in the case of a co-worker report), another co-worker, an employment training specialist, or a supervisor. Individuals such as parents, group home parents, or independent living staff also can be used for validation in the case of Item 7 (Befriending). Once the information is validated, that particular information can be used in the scoring of the Co-worker Involvement Instrument. If the information is not validated by any of the above mentioned persons, the scorer must disregard that information and begin again with another co-worker. If three co-workers have been approached and none of them talk with the target employee and do not know of anyone who does, the process is stopped. The Co-worker Involvement Instrument then is scored based upon observational and relevant document data only.

Objective of the Co-worker Involvement Instrument

The objective of this instrument is to determine the type and degree of co-worker involvement being provided to target employees. A completed instrument represents co-worker involvement with a target employee, rather than overall support present at a particular job site. The attached co-worker involvement instrument is intended to be completed on a single employee. Additional copies must be scored on other target employees who may be working at the same job site (e.g., in dispersed and clustered placements).

Co-worker Involvement Index Scoring Procedures

Item 1:

Physical Integration — The target employee works, takes breaks, and eats meals in the same areas at the same time as the co-worker(s).

2 - The target employee works in the same areas at the same time as the co-workers a portion of the day and takes breaks and eats meals in the same areas at the same time as co-workers.

1 - The target employee does not work in the same areas at the same time as the co-workers but takes breaks and/or eats meals in the same areas at the same time as the co-workers (or vice versa).

0 - The target employee does not work, take breaks, or eat meals in the same areas at the same time as co-workers.

Instructions for Scoring Item 1

The employment training specialist or supervisor directly observes the target employee during actual work on the job, breaks, during transitions (e.g., task or location change), and lunch. Relevant documents may also be consulted, however, it is not recommended that they be the sole basis for scoring this item, as the target employee's situation may have changed without documents being updated.

Observations

- During lunch and work breaks
- During actual work on-the-job

Relevant documents

- Work schedule
- Observational records

Item 2:

Social Integration — While completing his/her work or during breaks, the target employee regularly has opportunities to interact with co-workers without negative effects on job performance.

2- There are regularly occurring opportunities for the target employee to interact with co-workers without negative effects on job performance.

1- There are few opportunities for target employees to interact with co-workers without negative effects on job performance.

0- There are no opportunities for the target employee to interact with the co-workers without negative effects on job performance.

Instructions for Scoring Item 2

The employment training specialist or supervisor directly observes the target employee during actual work on the job. In addition, the job description and work schedule are evaluated in light of available target employee work performance measures. This information is used to determine if the target employee works in a situation that allows for social integration comparable with that of his/her co-workers. Further information may be gathered from interviews with co-workers working in the target employee's vicinity regarding how the target employee's work is performed as reflected in opportunities to interact with co-workers.

Observations

- During actual work on the job
- During breaks

Verbal report

- By co-workers

Relevant documents

- Work Performance Evaluation Form (WPEF)
- Company job description
- Work schedules

Item 3:

Training — The co-worker supports a target employee by providing on-the-job skill training.

2 - A co-worker independently provides on-the-job training to the target employee in an effort to improve the employee's work performance.

1 - A co-worker provides on-the-job training to target employee only when provided assistance (e.g., prompting, instruction, feedback) by an employment training specialist or supervisor.

0 - A co-worker does not provide on-the-job training to the target employee.

Instructions for Scoring Item 3

The employment training specialist or supervisor directly observes the target employee on the job, during breaks, during transitions (e.g., task or location change) and during lunch to determine the extent to which training is provided by co-workers. Co-worker's verbal reports also may be utilized. For a co-worker's or target employee's solicited or unsolicited verbal report of training to be considered valid, the report must be corroborated by either a supervisor, the employment training specialist, the target employee, or another co-worker. The employment training specialist's or supervisor's report of an occurrence of training will be accepted without corroboration.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data
- Individualized Written Rehabilitation Plan (IWRP)

Item 4:

Associating (frequency) — A co-worker socially interacts with the target employee at the work place.

2- A co-worker socially interacts with the target employee at the work place on a regular basis typically on a daily basis.

1- A co-worker socially interacts with the target employee at the work place on an irregular basis, usually only two to three times per week.

0- Co-workers do not interact socially with the target employee or co-workers interact socially with the target employee at the workplace rarely, oftentimes only once a week or less.

Instructions for Scoring Item 4

The employment training specialist or supervisor directly observes the target employee during actual work on-the-job, breaks, transitions (e.g., task or location change) and lunch to determine the frequency of associating between co-worker(s) and the target employee. Co-worker's or target employee's verbal reports of associating may be elicited. To be considered valid, however, either of these reports must be corroborated by one of the following persons: supervisor, employment training specialist, target employee, or another co-worker. The employment training specialist's or supervisor's report of an occurrence of associating will be accepted without corroboration, as will their written direct observational records.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., arrival/departure, task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data

Item 5:

Associating (appropriateness) — A co-worker interacts socially with the target employee in a manner considered appropriate within the context of the work place.

2 - The majority of a co-workers' social interactions with a target employee are considered appropriate within the context of the workplace.

1 - Some of a co-worker's social interactions with a target employee are considered appropriate within the context of the workplace.

0 - There are few or no social interactions considered appropriate within the context of the workplace between the target employee and co-workers.

Instructions for Scoring Item 5

The employment training specialist or supervisor directly observes the target employee during actual work on the job, breaks, transitions (e.g., task or location change), and lunch to determine the appropriateness of associations between a co-worker and a target employee. Co-worker's or target employee's verbal reports may be elicited. Support for a co-worker's or target employee's solicited or unsolicited verbal report of the appropria ess of an association(s) will be required by corroboration of either a supervisor, the employment training specialist, target employee, or another co-worker. The employment training

specialist's or supervisor's report of the appropriateness of an association will be accepted without corroboration.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., arrival/departure, task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data

Item 6:

Befriending — A co-worker befriends the target employee by interacting socially with the target employee outside of the workplace.

2- A co-worker and the target employee report interacting socially outside the workplace at least once a month.

1- A co-worker and the target employee report interacting socially outside the workplace less than once a month.

0- A co-worker and the target employee report not interacting socially outside the workplace.

Instructions for Scoring Item 6

Identification of the target employee's friends may be obtained by first asking the target employee or someone familiar with him/her (co-worker, supervisor, employment training specialist, parent, group home parent, independent living staff) who his/her friends are at the workplace. Corroborative evidence of social interactions outside of the workplace must

be gained via verbal report of the co-worker reported to be involved in the social interaction.

Verbal report

Verbal report of target employee and co-worker who participated in the following potential social activities.

- Attending sports or public events
- Attending movies
- Socializing at bars or dances
- Socializing at company sponsored functions such as Christmas party or summer agency picnic
- Eating out
- Visiting each other's homes
- Sharing transportation
- Attending church together
- Other (please specify for future reference)

Item 7:

Advocating — The co-worker advocates for the target employee by optimizing, backing, and supporting the target employee's employment status.

2- A co-worker optimizes, backs, and supports the target employee's employment status. This level of support is provided by the co-worker when needed without the assistance or prompting of others.

1- A co-worker optimizes, backs, and supports the target employee's employment status. This level of support is provided by the co-worker when needed with assistance and/or prompting from others.

0- A co-worker does not advocate (optimize, back, support) for the target employee's employment status.

Instructions for Scoring Item 7

The employment training specialist or supervisor directly observes the target employee and co-workers around him/her during actual work on-the-job, breaks, transitions (e.g., task or location change) and lunch to determine instances of advocating by co-worker(s). Co-worker's verbal reports may be elicited. For a co-worker's solicited or unsolicited verbal report of advocating to be considered valid, the report must be corroborated by one of the following persons; supervisor, employment training specialist, target employee or another co-worker: The employment training specialist's or supervisor's report of an occurrence of advocating will be accepted without corroboration.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data

Item 8:

Evaluating — A co-worker evaluates and provides (written/verbal) feedback to the target employee.

2- The co-worker appraises the target employee's performance and provides (written/verbal) feedback to the target employee.

1- The co-worker evaluates the target employee's performance without providing written/verbal feedback directly to the target employee.

0- The co-worker does not evaluate or provide feedback to the target employee.

Instructions for Scoring Item 8

The employment training specialist or supervisor directly observes the co-worker when acting in a supervisory role, to assess the co-worker's performance as an evaluator of the target employee's skills. Relevant documents such as evaluative forms used by the co-worker also are considered. Co-worker's verbal reports may be elicited. For a co-worker's or target employee's solicited or unsolicited verbal report of information giving to be considered valid, the report must be corroborated by one of the following persons: supervisor, employment training specialist, target employee or another co-worker. The employment training specialist's or supervisor's report of an occurrence of evaluating will be accepted without corroboration.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data
- Work Performance Evaluation Form (WPEF)
- Company personnel evaluation form
- Informal evaluation instruments
- Individualized Written Rehabilitation Plan (IWRP)

Item 9:

Giving Information — The co-worker provides information spontaneously to the target employee.

2- The co-worker spontaneously volunteers instruction/feedback and answers questions for the target employee.

1- The co-worker provides information to the target employee only when directly asked a question.

0- The co-worker discourages target employee's information seeking behavior by not providing information or answering questions.

Instructions for Scoring Item 9

The employment training specialist or supervisor directly observes the target employee during actual work on the job, breaks, during transitions (e.g., task or location change) and lunch to determine instances of information giving by co-workers. Co-worker's or target employee's verbal reports may be elicited. For a co-worker's or target employee's solicited or unsolicited verbal report of information giving to be considered valid, the report must be corroborated by one of the following persons: supervisor, employment training specialist, target employee, or another co-worker. The employment training specialist's or supervisor's report of an occurrence of information giving will be accepted without corroboration.

Observations

- During lunch and work breaks
- During actual work on the job
- During transitions (e.g., task or location change)

Verbal report

- By co-workers or target employee
- By supervisor or employment training specialist

Relevant documents

- Direct observational records as recorded by supervisor or employment training specialist, such as daily observational data

Part 2: Co-Worker Involvement Instrument

Instructions for Scoring Employment Site Demographics

Question 1: Use the target employee's social security number to identify the target employee for whom the scale is being scored.

Question 2: Enter the target employee's job title based upon the employee's job description.

Question 3: Indicate how long (in years and months), the target employee has held his/her present job.

Question 4: Indicate (by circling supervisor or employment training specialist) who is completing the instrument. Name the employment training specialist or supervisor who is completing the scale. Refer to the glossary for definitions of supervisor and employment training specialist.

Question 5: Indicate the type of placement (i.e., individual, clustered or dispersed placement, mobile work crew).

Question 6: Indicate the type of job the target employee performs.

Question 7: Indicate the number of visits the employment training specialist currently makes to the employment site to visit with the target employee.

Question 8: Indicate the length of time that the employment training specialist has been working with the target employee at the employment site.

Question 9: Indicate the total number of employees working at the employment site.

Question 10: Indicate the number of male (M) and female (F) nonhandicapped co-workers who work in the same work area as the target employee when he/she is at work. Then indicate the number of male (M) and female (F) co-workers with handicaps who work in the same work area as the target employee when he/she is at work.

Question 11: Indicate the number of nonhandicapped co-workers who do tasks similar to those performed by the target employee in the same work area when he/she is at work. Then indicate the number of co-workers with handicaps doing tasks similar to those performed by the target employee in the same area when he/she is at work.

Co-worker Involvement Instrument

Date _____

Time _____

Employment Site Demographics

1. Target employee's identification number _____
2. Target employee's job title _____
3. Target employee's time on job _____ years _____ months
4. Scorer (supervisor or employment training specialist) identification

   _____

5. Type of Placement:

   ____ Individual
   ____ Dispersed group
   ____ Clustered group
   ____ Mobile crew

6. Type of Job:

   ____ Light industrial
   ____ Warehouse
   ____ Retail
   ____ Clerical
   ____ Other _____
   ____ Laundry
   ____ Maintenance (janitorial and/or grounds)
   ____ Food Service
   ____ Health Care

7. Employment Training Specialist involvement at the work site:

   ____ daily
   ____ once a week
   ____ twice a month
   ____ less than once a month
   ____ 2-4 times per week
   ____ 3 times per month
   ____ once a month

8. The length of time that the employment training specialist has been familiar with the job site:

   ____ 3-5 months
   ____ 10-12 months
   ____ 6-9 months
   ____ more than one year

9. Approximate total number of employees at the employment site. _____

10. Number of co-workers that work in the same area as the target employee when the target employee is at work. ____ M ____ F nonhandicapped workers ____ M ____ F co-workers with handicaps.

11. Number of co-workers that perform similar tasks as the target employee.

    ____ non-handicapped co-workers
    ____ co-workers with handicaps

Co-worker Involvement Items

Item 1: Physical Integration - The target employee works, takes breaks, and eats meals in the same areas at the same time as the co-worker(s). 2 1 0

2 - Works , eats, takes breaks in same area at same time
1 - Does not work in same area at same time but takes breaks and/or eats in same area at same time (or vice versa)
0 - Does not work, take breaks, or eat in same area at same time

Item 2: Social Integration - While completing his/her work or during breaks, the target employee regularly has opportunities to interact with co-workers without negative effects on job performance. 2 1 0

2 - Regularly occurring opportunities for interaction
1 - Few opportunities for interaction
0 - No opportunities for interaction

Item 3: Training - The co-worker supports a target employee by providing on-the-job skill training. 2 1 0

2 - Co-worker independently provides on-the-job training to target employee
1 - Co-worker provides on-the-job training when prompted and/or assisted
0 - Co-worker does not provide on-the-job training to target employee

Item 4: Associating (frequency) - A co-worker socially interacts with the target employee at the work place. 2 1 0

2 - Co-worker socially interacts with target employee typically on a daily basis
1 - Co-worker socially interacts with target employee typically only 2 to 3 times per week
0 - Co-worker socially interacts with target employee once a week or less

Item 5: Associating (appropriateness) - A co-worker socially interacts with the target employee in a manner considered appropriate within the context of the work place. 2 1 0

2	- Most social interactions are appropriate
1	- Some social interactions are appropriate
0	- Few social interactions are appropriate

Item 6: Befriending - A co-worker befriends the target employee by interacting socially with the target employee outside of the work place. 2 1 0

2	- Interaction occurs at least once a month
1	- Interaction occurs less than once a month
0	- Interaction does not occur

Item 7: Advocating - The co-worker advocates for the target employee by optimizing, backing, and supporting the target employee's employment status. 2 1 0

2	- Co-worker advocates independently
1	- Co-worker advocates with assistance or prompting
0	- Co-worker does not advocate

Item 8: Evaluating - A co-worker evaluates and provides (written/ verbal) feedback to the target employee. 2 1 0

2	- Co-worker evaluates and provides feedback
1	- Co-worker evaluates without providing feedback
0	- Co-worker does not evaluate or provide feedback

Item 9: Giving Information - The co-worker provides information spontaneously to the target employee. 2 1 0

2	- Co-worker spontaneously gives information
1	- Co-worker gives information only when asked by target employee
0	- Co-worker does not give information even when asked

TOTAL SCORE _____ (0 - 18)

Acknowledgments

The authors gratefully acknowledge the following Illinois supported employment model programs for providing comments on earlier versions of this instrument:

Ada S. McKinley Community Services
Alliance for the Mentally Ill of Rock Island and Mercer Counties
Aid to Retarded Citizens, Inc.
Belleville Mental Health Out-Patient Clinic
Center for Disabled Student Services
The Center for Rehabilitation and Training of Persons with Disabilities
Chicago Association for Retarded Citizens
Chicago Lighthouse for the Blind
Comprehensive Services
Cornerstone Services Inc./Will Co. Sheltered Workshop
Countryside Association for the Handicapped, Inc.
Developmental Services Center
Effingham Association for Retarded Citizens
Effingham County Guidance and Counseling Center
El Valor Corporation
Employer Resource Service/Arrise
Franklin-Williamson Workshop
Happiday Centers, Inc.
Institute For Human Development
Iroquois ARC
Job Resources for the Disabled
Lake County Society for Human Development
The Lambs, Inc.
Maine Township School District
Marionjoy Rehabilitation Center
McDonough County Rehabilitation Center
Mental Health Centers of Central Illinois
Mid Valley Special Ed Cooperative
North Shore Association for the Retarded
Northwest Mental Health Center
Occupational Developmental Center
Open Door Rehabilitation Center
Opportunity House, Inc.
Orchard Village
Park Lawn
Ray Graham Association
Seguin Services, Inc.
Sertoma Career Center
SHORE Community Services for Retarded Citizens
Skills Incorporated
SIU School of Medicine/Community Support Network
Special Education Parents Alliance
Spectrum Vocational Services
United Cerebral Palsy of Lincoln Land

Victor C. Neumann Association
Warren Achievement Center

The authors gratefully acknowledge the following individuals for assistance:

Robert Gaylord-Ross
Hyrum Park
Renee Cameto
Phyllis Tappe
James Strauch
Roger Bushton

References

Bellamy, G. T., Rhodes, L. E., Bourbeau, P. E., & Mank, D. M. (1986). Mental retardation services in sheltered workshops and day activity programs: Consumer benefits and policy alternatives. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 257-271). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J. (1986). Identifying and teaching valued social behaviors in competitive employment settings. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 273-287). Baltimore: Paul H. Brookes.

Chadsey-Rusch, J., & Gonzalez, P. (1986). Social ecology of the workplace: Coding categories and rules. Champaign: Transition Institute, University of Illinois.

Chadsey-Rusch, J., & Gonzalez, P. (1988). Social ecology of the workplace: Employers' perceptions versus direct observation. Research in Developmental Disabilities, 9, 229-245.

Crouch, K. P., Rusch, F. R., & Karlan, G. P. (1984). Competitive employment: Utilizing the correspondence training paradigm to enhance productivity. Education and Training of the Mentally Retarded, 19, 268-275.

Federal Register. (September 25, 1984). Developmental Disabilities Act of 1984. Report 98-1074, Section 102 (11) (F).

Federal Register. (August 14, 1987). The State Supported Employment Services Program, 52 (157), 30546-30552.

Kochany, L., Simpson, T., Hill, J., & Wehman, P. (1982). Reducing noncompliance and inappropriate verbal behavior in a moderately retarded food service worker: Use of a systematic fading procedure. In P. Wehman & M. Hill (Eds.), Vocational training and job placement of severely disabled persons (pp. 128-139). Richmond: School of Education, Virginia Commonwealth University.

Lagomarcino, T. R., & Rusch, F. R. (1988). Competitive employment: Overview and analysis of research focus. In V. B. Van Hasselt, P. S. Strain, & M. Hersen (Eds.), Handbook of developmental and physical disabilities (pp. 150-158). New York: Pergamon Press.

McNair, J., & Rusch, F. R. (1989). This volume.

Menchetti, B. M., & Rusch, F. R. (1988). Analysis of select psychometric properties of the Vocational Assessment and Curriculum Guide. American Journal on Mental Retardation, 93, 283-289.

Nisbet, J., & Hagner, D. (in press). Natural supports in the workplace: A reexamination of supported employment. Journal of the Association for Persons with Severe Handicaps.

Rusch, F. R. (1986). Introduction and developing a long-term follow-up program. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 3-67, 225-232). Baltimore: Paul H. Brookes.

Rusch, F. R., Hughes, C., Johnson, J. R., & Minch, K. E. (1988). A descriptive analysis of co-worker involvement in supported employment. Manuscript submitted for publication.

Rusch, F. R., Johnson, J. R., & Hughes, C. (1990). Analysis of co-worker involvement in relation to level 4 disability versus placement approach among supported employees. Journal of the Association for Persons with Severe Handicaps, 15(1), 32-39.

Rusch, F. R., & Menchetti, B. M. (1981). Increasing compliant work behaviors in a non-sheltered work setting. Mental Retardation, 19, 107-111.

Rusch, F. R., & Minch, K. E. (1988). Identification of co-worker involvement in supported employment: A review and analysis. Research in Developmental Disabilities, 9, 247-254.

Rusch, F. R., & Mithaug, D. E. (1980). Vocational training for mentally retarded adults: A behavior analytic approach. Champaign, IL: Research Press.

Rusch, F. R., Morgan, T. K., Martin, J. E., Riva, M., & Agran, M. (1985). Competitive employment: Teaching mentally retarded employees self-instructional strategies. Applied Research in Mental Retardation, 6, 389-407.

Rusch, F. R., Schutz, R. P., Mithaug, D. E., Stewart, J. E., & Mar, D. K. (1982). VACG: The Vocational Assessment and Curriculum Guide. Seattle, WA: Exceptional Education.

Rusch, F. R., Trach, J. S., Winking, D. L., Tines, J. L., & Schutz, R. P. (1987). Introduction to supported employment in Illinois: Current status of the initiative. In F. R. Rusch & J. S. Trach (Eds.), Supported employment in Illinois: Program implementation and evaluation (Vol. 1, pp. 1-16). Champaign: Transition Institute, University of Illinois.

Rusch, F. R., Weithers, J. A,. Menchetti, B. M., & Schutz, R. P. (1980). Social validation of a program to reduce topic repetition in a non-sheltered setting. Education and Training of the Mentally Retarded, 15, 208-215.

Schutz, R. P., Jostes, K. F., Rusch, F. R., & Lamson, D. S. (1980). Acquisition, transfer, and social validation of two vocational skills in a competitive employment setting. Education and Training of the Mentally Retarded, 15, 306-311.

Schutz, R. P., Rusch, F. R., & Lamson, D. S. (1979). Eliminating unacceptable behavior: Evaluation of an employer's procedures to eliminate unacceptable behavior on the job. Community Service Forum, 1, 5-6.

Shafer, M. S. (1986). Utilizing co-workers as change agents. In F. R. Rusch (Ed.), Competitive employment issues and strategies (pp. 215-224). Baltimore: Paul H. Brookes.

Stanford, K., & Wehman, P. 91982). Improving social interactions between moderately retarded and nonretarded coworkers: A pilot study. In P. Wehman & M. Hill (Eds.), Vocational training and job placement of severely disabled persons (pp. 141-159). Richmond: School of Education, Virginia Commonwealth University.

Trach, J. S., Rusch, F. R., & DeStefano, L. (1987). Supported employment program development: Degree of implementation manual. Champaign: Transition Institute, University of Illinois.

White, D. M., & Rusch, F. R. (1983). Social validation in competitive employment: Evaluating work performance. Applied Research in Mental Retardation, 4, 343-354.

Research Faculty at the University of Illinois at Urbana-Champaign

Janis Chadsey-Rusch
Assistant Professor of
Special Education

Lizanne DeStefano
Assistant Professor of
Educational Psychology

Patricia A. Gonzalez
Postdoctoral Fellow in
Special Education

Delwyn L. Harnisch
Associate Professor of
Educational Psychology

Laird W. Heal
Professor of Special
Education

Carolyn Hughes
Postdoctoral Fellow in
Special Education

Francesca Lundström
Visiting Assistant Professor of
Special Education

Wendy B. McCaughrin
Visiting Assistant Professor of
Special Education

L. Allen Phelps
Professor of Vocational
and Technical Education

Adelle M. Renzaglia
Associate Professor of
Special Education

Frank R. Rusch
Professor of Special
Education

Robert E. Stake
Professor of Educational
Psychology

John S. Trach
Visiting Assistant Professor of
Special Education

Jho-Ju Tu
Visiting Assistant Professor of
Special Education

Institute Advisory Committee

Secondary Transition Intervention Effectiveness Institute
University of Illinois at Urbana-Champaign

TRANSITION INSTITUTE AT ILLINOIS