

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

Janis Chadsey-Rusch  
University of Illinois at Urbana-Champaign

*The social interactions of a group of 10 students with severe handicaps attending a junior high school campus were described with the use of narrative recording procedures. The students were observed when they arrived at school, during lunch, and when they were engaged in vocational training. In addition, teacher perceptions of behavior were measured, and parents were interviewed regarding their childrens' future vocational opportunities and their social relationships with their peers. The results from this study indicated that (a) these youth of transition age were involved in more task-related than nontask interactions, (b) they were engaged in more interactions with teachers than peers, (c) the purposes of the interactions were similar across contexts, and (d) these youth were dependent on contrived or extra cues and feedback from their environment in their vocational settings. These results are discussed with respect to their implications for facilitating the transition from school to work.*

**DESCRIPTORS:** adolescents, competitive employment, qualitative research, social interaction, social skills, vocational training, secondary programs.

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

---

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.

The author extends her thanks to the students and staff (Vicki James, Vania 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.

Requests for reprints should be sent to Janis Chadsey-Rusch, University of Illinois at Urbana-Champaign, 110 Education Building, 1310 South Sixth Street, Champaign, IL 61820.

future environments (Brown et al, 1979; Brown et al, 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, Horiuchi, & Fanning, 1985; Wehman, Kregel, & Barcus, 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 for accomplishing this goal, called the supported employment model, has been described and implemented, and the results have been promising (Rusch, 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 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 need to develop in high school to prepare them for work settings are vocational or job-task skills. Social skills are also important. 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 in which 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 were 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 occurring 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 occurring 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 that influence social interactions may be difficult to capture. Consequently, this study sought to describe the social interactions employed by a group of secondary-aged students with severe handicaps with the use of narrative recording procedures. The students' 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 their implications for facilitating the transition from school to work.

## Method

### Subjects

A total of 10 students with severe handicaps participated in the study; seven of the students were male and three were female. Most of the students could walk independently. Four of the students, however, were nonambulatory. The average age of the students was 18.4 years ( $SD = 1.8$ ). According to AAMR classification (Grossman, 1983) 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" (i.e., where, when, what) 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 and 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.

### Setting

All of the students attended a public junior high school. The majority of the students, however, 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 initially 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 television 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 mimeograph 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*.<sup>1</sup> The scale was designed specifically for this study and consisted of the same type of social behaviors that were contained in the social code used to analyze the narrative records. Thus, a comparison could be made between teacher perceptions of their students' social behaviors and behaviors observed during 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 consisting of 18 open-ended questions.<sup>1</sup> This measure probed the feelings and observations of parents about their children's future vocational opportunities and their social relationships with their peers.

<sup>1</sup> A copy of this material can be obtained by writing to the author.

#### 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 in which 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 that was attached to a small tape recorder that signaled the observer at 1-minute intervals. After each 1-minute interval, observers skipped a line on the recording form. There were twenty 1-minute interval signals on each tape.

**Other measures.** Teachers independently completed the Social Competence Rating Scale once for each student 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 special education student. 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 who were 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 inter-observer 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 instituted 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 where 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 relation to the person selected for observation. Observers essentially made a chronological record of the sequence of actions of the targeted individual.

All observers watched the videotape and recorded interactions for 5 minutes and then read their narratives aloud for comparison with the author's observation, which 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 pertinent questions.

### Analysis

All handwritten narrations were dictated by the observers into tape recorders and then typed by secretaries. This procedure was necessary because the handwriting of 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.<sup>1</sup> 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 was noted; (b) if the initiator received a response, this 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 being social/nontask if it was unrelated to either school or vocational tasks or assignments. An interaction was coded as social/task-related 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; these codes are displayed in 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 1 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 the other.

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 overall percent 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.

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 punitive 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 "okay," "fine," "good job," or "alright!"). 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, okay?) 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."), social-related situation ("Let me help carry that stuff to class."), or a self-initiated, spontaneous, nonverbal behavior described in the narrative as "helping."
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 with 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 that pokes fun at a person, (b) any question, comment, response, joke, gesture that is described in the narrative as a "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 (e.g., "Hey./Hey. Robin./Time./You there." or a wave, whistle, or raising one's hand.

The average intercoder reliability scores for eight observations in each condition are included in Table 2.

*Interobserver reliability.* As indicated above, meas-

uring 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 to compute reliability.

Reliability was once again calculated using the more stringent agreement of occurrence method in which the number of occurrences was 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 interviews are discussed. The majority of the results are presented using descriptive statistics; however, qualitative data are used to enhance quantitative measures.

### Task Versus Nontask 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

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/Nontask 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

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 nontask 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 that involved each of these groups of 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 nontask 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 in which the purpose was to direct, question, or provide information. Again, it must be remem-

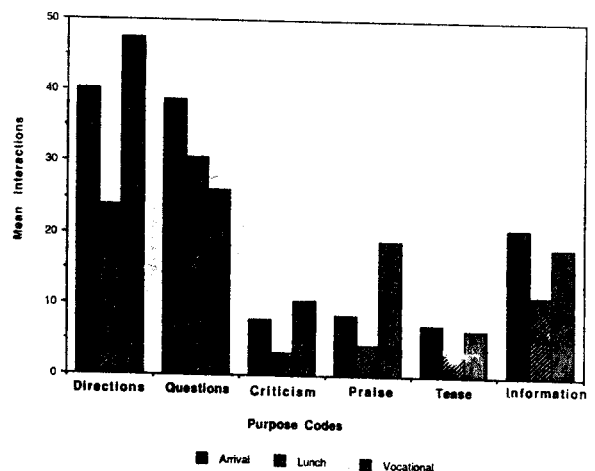


Figure 1. Purpose of interactions across each condition by mean number of occurrences.

bered 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 "Okay, go over there." S goes to the desk and gets the attendance sheet.

In addition to being involved in interactions in which 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 in which the purpose was to question, direct, or provide information. While the students were eating lunch, these three types of interactions constituted 82% of all their interactions. 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, "Okay, let's start with the beans."

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 television 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 ( $M = 18.1$ ), praise ( $M = 18.0$ ), and criticism ( $M = 10.5$ ). Again, these types of interactions were instructional, initiated by teachers, and related to the work for which the student was 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.

The teachers, however, 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 to 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 ( $M = 2.3$ ) 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 exhibit these types of behavior a total of 372 times, or each student (on the average) engaged in 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 frequently than the teachers perceived.

#### Parent Interviews

Telephone interviews were conducted with six parents, two guardians, and one brother of the students; one parent chose not to participate in the interview. Results from these interviews indicated that although nine of the ten respondents were very pleased with the school program, only four 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 or daughter to work in an integrated employment setting, and three parents mentioned jobs that they hoped their son or daughter would have when they graduated from school: working at a cable television company, doing something clerical, and working in the computer industry. Five of the nine parents or guardians indicated that they were anxious and unsure about 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 the feelings of parents and guardians 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 okay, one said that she wished they were more appropriate in age 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 or guardians indicated that their children did not have a lot of friends and that they

rarely interacted with friends. Six of the nine parents or guardians stated that they wished their son or 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 observed directly 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 interact not only about work-related matters, but also frequently about nontask matters, such as the weather, sports, and cars (Chadsey-Rusch & Gonzalez, 1988; Lignugaris/Kraft et al., 1988). Additionally, Chadsey-Rusch and Gonzalez found that nontask interactions occurred throughout work periods, and were the most frequent types of interactions displayed upon arrival at work and lunch. Because nontask interactions seem to occur frequently in employment contexts, 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 nontask 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 nontask 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 most frequent 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, in which instructional programs were frequent, it is a surprising finding for the lunch condition. Mealtimes should be social times (Morris, 1987). Un-

fortunately, few teachers were observed talking with the students about nontask 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. It may be appropriate, however, to establish a balance between task and nontask 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 from 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 9 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 a more 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 18 to 22 year olds at school. The low rates may also have occurred because the students were influenced by observer presence and did not display their "normal" rates of social interaction. Students, however, should have been somewhat used to 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 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 students' instruction took place outside of school, where there was little access to school peers; this point seems to warrant further discussion. Several au-



thors (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 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). 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 in which 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 near transition age. This is crucial because individuals with handicaps often lose their jobs because of inappropriate social behaviors (e.g., Brickey et al., 1985; Greenspan & Shultz, 1981).

Parents and guardians were concerned that their children had few friends and would be unable to get a job 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 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). Parents also need to know that work settings are places where friendships develop (Pogrebin, 1987; Zetlin & Murtaugh, 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 number of students in the sample 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, and thus 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. In combination with the complexity of the code, this may account for some of the variability in the interobserver and inter-coder scores. For intercoder agreement, particularly with respect to the purpose codes, mean agreement scores ranged from 100% (greeting and praise) to 50% (criticism). The low reliability scores for criticism may have been due to the fact that few instances of criticism occurred. Although narrative recordings capture the "richness" of behavior in context, they also may 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 interobserver procedures in particular 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. Those used in this investigation are typically applied to direct observational research using a priori codes. Although such procedures are uncommon in qualitative research, 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 nontask-related interactions during arrival at school, lunch, and vocational training. Based on these interaction patterns, recommendations were made that could facilitate the transition from school to work. These recommendations included: (a) increasing interactions with nonhandicapped students and co-workers, (b) increasing the frequency of nontask interactions, (c) decreasing the frequency of directions and praise in vocational training settings, and (d) enhancing parental expectations about future employment and friendship possibilities.

## 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., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenewald, L. (1979). A strategy for developing chronological age-appropriate and functional curricular content for severely handicapped adolescents and young adults. *Journal of Special Education*, 13, 81-90.
- Brown, L., Long, E., Udvari-Solner, 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. *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.
- 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., and 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). A longitudinal study of graduates of special education. *Interchange*, January, 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.
- Grossman, H. J. (Ed.) (1983). *Classification in Mental Retardation*. Washington, D.C.: American Association on Mental Deficiency.
- Hanley-Maxwell, C. (1986). Curriculum development. In F. R. Rusch (Ed.), *Competitive employment issues and strategies* (pp. 187-197). Baltimore: Paul H. Brookes.
- Hanley-Maxwell, C., Rusch, F. R., Chadsey-Rusch, J., & Renzaglia, A. (1986). Factors contributing to job terminations. *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. *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 (1), 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.
- 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.

Received: October 27, 1989  
 Final Acceptance: February 7, 1990  
 Editor in Charge: Lori Goetz