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Abstract

This paper describes several strategies used to ensure the inclusion of people with dual sensory impairments and other multiple disabilities in integrated community employment. It discusses job restructuring, the use of natural supports and volunteerism. people with dual sensory impairments often lack a personal voice that is readily understood and the provision of resources needed to enable employees to participate in the social context of the workplace is an essential feature of integrated work models. **Keyword: Employment**

Employment of Persons with Dual Sensory Impairments: Strategies for Inclusion

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Case study examples highlight several strategies used by Bay Area Personnel Systems, a model demonstration project, to ensure the inclusion of persons with dual sensory impairments and other multiple disabilities in integrated community employment. Heterogeneous group placement, job restructuring, use of natural support, volunteerism, and social skills training are practices perceived to be particularly critical in ensuring integrated work for people with dual sensory impairment.

DESCRIPTORS: dual sensory impairment, job assessment, job placement, model demonstration, supported employment, vocational environment, vocational training

While the supported employment initiative heralded the inclusion of persons with severe and profound disabilities in integrated competitive employment (see Wehman, 1988), recent analyses suggest that outcomes may have fallen short of expectations (Kregel & Wehman, 1989; Wehman, Kregel, & Shafer, 1989). Kregel and Wehman (1989) analyzed employment histories and functional characteristics of 1,411 persons in supported employment programs in eight states. They found that persons with severe or profound disabilities represented less than 8% of the sample, while persons with specific disabilities including autism, cerebral palsy, and sensory impairments, represented less than 4%. Such data suggest that supported employment programs are not yet serving all of the individuals for whom the supported employment initiative was intended.

Reviews of available research have consistently identified employment and occupational status as a priority research and service need for persons with dual sensory impairment (Barrett & Smith, 1986; Bullis & Bull, 1986; Graves & Ferrell, 1984). Because of their ongoing support needs, supported employment is a particularly promising service delivery option for deaf-blind persons who may experience other multiple disabilities, including cerebral palsy, health impairments, and behavioral disorders (see Best, 1986; Campbell, 1987; Fredericks & Baldwin, 1987). The published literature has nevertheless addressed largely sheltered options (e.g., Busse, Romer, Fewell, & Vadasy, 1985; Gerner, 1986), as might be predicted based upon Kregel and Wehman's (1989) analysis.

Gaylord-Ross, Lee, et al. (in press) recently reported initial outcomes by Bay Area Personnel Systems (BAPS), a model demonstration project for persons with dual sensory impairments. They report successful placement of eight deaf-blind individuals into integrated work settings. Employment settings included restaurants, retail stores, a public library, and an insurance corporation. Individuals worked from 4 to 20 hours per week and were employed from 11 to 70 weeks. Wages earned ranged from $.70 per hour for one individual who worked at a convalescent center through a contract between an adult service agency and the employer, to $5.50 per hour for an individual who was hired directly by the corporation where she worked.

The integrated community employment outcomes reported by Gaylord-Ross, Lee, et al. (in press), with one exception, do not meet the Federal Standard of 20 hours of paid employment per week. Instead, they reflect development and demonstration of innovation in service delivery that may emerge as individuals with severe and profound disabilities are, in fact, incorporated into the workplace. As Kregel and Wehman (1989) noted, "It would be a serious mistake to 'institutionalize' the four major supported employment models of individual placement, enclaves, mobile work

crews, and small businesses too quickly. . . ." (p. 301). Nisbet and Hagner (1988) have similarly argued that the existing models of supported employment should be considered as only a few among many support options for community employment, and have offered several additional models for consideration. Sowers and Powers (1989) also identified additional strategies needed if persons with significant physical disabilities are to be successfully included in supported employment.

In this paper, case study examples are used to highlight several strategies BAPS found to be effective in ensuring the inclusion of persons with dual sensory impairments and other multiple disabilities in integrated community employment, including heterogeneous group placement, job restructuring, use of natural supports, volunteerism, and social skills training. These strategies are largely derived from the growing supported employment literature (see Rusch, 1986a; Wehman & Moon, 1988) and, as such, represent applications, innovations, or extensions of current practice rather than the discovery of a novel model. The strategies highlighted here also do not reflect the only practices that BAPS used in achieving successful outcomes. They reflect, instead, those practices perceived to be particularly critical and/or helpful in ensuring integrated work for the people with dual sensory impairments.

The paper begins with a brief overview of the BAPS placement process, followed by presentation of four different case studies. The specific strategies reflected in the case study examples are then discussed, and the paper concludes with a brief discussion of how these examples do, in fact, reflect the zero-reject notion that constituted the original conceptualization of supported employment.

Placement Procedure

Gaylord-Ross, Lee, et al. (in press) report a three-phase process in achieving integrated work and/or supported employment placements. During the initial assessment and planning phase, a significant other interview (Falvey, 1989) was conducted to identify priorities that significant others might have for the student across curricular/life space areas (domestic, community, leisure, vocational). Also reviewed was any accumulated information concerning sensory functioning, communication, and mobility. The individual's own preferences, based on interviews and/or prior vocational training experiences, also were noted. When all relevant service agencies had been identified, an individualized transition plan (ITP; Schalock, 1986) was conducted with the individual, his or her family, educational personnel (teacher(s), related service personnel), and representatives from relevant adult service agencies (rehabilitation, developmental services, supported employ-

ment agencies, etc.). Following procedures developed by La Mar and Rosenberg (1986), all agency representatives and the student and his or her family together developed a "vision" of the student's postschool life, including where the student would live, work, and play. Actions required to achieve the vision, and the agency or person(s) responsible for the actions were listed in a specific timeline leading ultimately to integrated work in the community.

The second phase was placement. After the ITP team had determined potential types of placement that might be of interest to the student, environmental inventories (see Brown et al., 1984) and market surveys might be done to further assist in the identification of potential work sites. Thereafter, employers were contacted through personal visits, cold calls, letters, and referrals from other agencies. After a potential employer had identified the company's needs, the possibilities of job accommodation and restructuring (Martin, 1986; Sowers & Powers, 1991a) were discussed. For individuals working substantially below the rate of a nondisabled worker, the payment of a subminimum wage based on the employee's performance was determined through a Department of Labor Certification process (Lee & Johnston, 1990). The employer also was offered the option of a cost analysis, which identified potential jobs and provide an estimated cost savings through targeted job tax credits and expenditures for hiring through supported employment.

During the third, or training phase, targeted job(s) were task analyzed, and a systematic instructional program was developed (see Snell, 1987) to teach necessary job skills. Particular attention was given to identifying appropriate antecedent cues, prompts, and consequences that reflected awareness of the consequences of dual sensory impairment (see Gee, Graham, Oshima Yoshioka, & Goetz, in press) and to the development of appropriate adaptations and/or partial participation (see Baumgart et al., 1982; Goetz, Guess, & Stremmel-Campbell, 1987). The employee was then trained directly by the adult agency's employment specialist, with assistance faded over time as appropriate to the individual. In particular instances, as described below, specific communication skill training, as well as coworker support training, was also provided.

Case Study Scenarios

The following case study scenarios occurred within the broad placement procedure framework described above.

Howard

Howard works 1 1/2 hours a day, 5 days a week earning a wage of $1.30 per hour at a local pizza parlor. Howard is a 23-year-old man with congenital rubella syndrome associated with severe mental retardation and

seizure disorder; he is legally blind and deaf. Howard demonstrated a history of self-abusive behavior, has limited mobility requiring a combination of cane travel and sighted guide techniques, and relies on others for assistance in personal care and hygiene needs. His means of communication are idiosyncratic, including a small number of palmar signs and a tactile calendar (Van Dijk, 1986; Writer, 1987) used receptively, and nonsymbolic gestures and some facial expressions used expressively (see Siegel-Causey & Downing, 1987).

Howard arrives to work at 9:30 after traveling from home to the pizza parlor accompanied by the employment specialist. The employment specialist reviews each change in activity with Howard using a tactile calendar adapted for community use; Howard then joins the other coworkers at the site, including two coworkers with moderate and severe disabilities who have been working since 9:00 and 10:00 who, like most employees, travel independently to work. Howard works for 1 1/2 hours completing four tasks that have been specifically adapted for him: washing down tables, wiping benches, wiping ledges, and stacking plates and napkins. The employment specialist provides on-going support to Howard while also supporting, if needed, the two other coworkers with disabilities. At 11:00, Howard takes a break. When the co-workers in his group complete their jobs, they join Howard and travel together into the community for lunch.

Teresa

Teresa works 15 hours weekly, earning a wage of $2.25 per hour, at a restaurant near her home where she has been employed for almost 2 years. She is part of a dispersed group placement that includes Ralph, another worker with disabilities who is experiencing his first job after 30 years in a state institution. Teresa is 27 years old. Her dual sensory impairments are associated with rubella syndrome etiology; she wears hearing aids for a severe bilateral hearing loss and is legally blind in the one eye that has usable vision. Teresa is mobile with use of a cane and sighted guide and uses some sign language receptively and expressively to communicate basic wants and needs through simple phrases and sentences.

Part of Teresa's job is washing and chopping eight different vegetables for the restaurant's salad bar. Before Teresa was hired, the job description for salad bar preparation included washing and chopping vegetables, putting them in containers, and placing the containers into the salad bar located in the center of the restaurant. When Teresa and

Ralph were hired, the job was restructured into two different parts: Teresa preps the vegetables, which Ralph has set up for her each morning in a fixed sequence. Ralph's job is to set up the completed containers in the salad bar. After the salad bar prep is complete, Ralph empties trash and cleans the rest room and Teresa folds boxes for food orders to go and washes dishes. Ralph and Teresa each work 3 hours a day. Once a week they enjoy lunch at the restaurant after finishing their shift.

Arlene

Arlene performs volunteer work 75 minutes per day, 3 days a week at the local library in rural California. Arlene is a 26-year-old woman with cerebral palsy, bilateral hemiparesis, and spastic quadriplegia associated with severe mental retardation and seizure disorder; her records indicate she has light perception and a functional hearing loss. Arlene communicates by making quiet noises, and through changes in body tone. Arlene has some movement of her right hand between her thumb and forefinger. She is nonambulatory and requires assistance for all self-care needs. Arlene's medical needs include keeping hydrated due to her medication levels and also the hot weather conditions in her community. Arlene lives in a residential home (ICFMRDDH) with five other adults who also have physical and multiple severe disabilities.

This placement is the first work placement for both Arlene and her roommate. Arlene and her roommate leave their home by an agency van Tuesday, Wednesday, and Thursday mornings. They arrive at their local library 20 min prior to opening and enjoy a drink and snack outside in the presence of other patrons and fellow workers. (The local library utilizes the largest number of volunteers in the area.) Shortly after they finish their drinks, the library opens and the two women are assisted to the front desk. Arlene is assisted to give the staff a communication card that asks for help from the staff in getting her work materials. Arlene and her roommate/coworker assist the library by erasing the old return dates on library cards and stamping due dates on cards to be placed back into library books when they are checked out. Arlene's contribution is to cross off the current date by holding onto a felt pen which has been adapted with foam on the handle. After the old dates are blackened, staff stamps on the new dates. When 1 1/4 hours have elapsed, both women are assisted to put their materials away. Then the women can look at a

magazine or listen to music while waiting for the van to arrive.

Lizbeth

Lizbeth is a 26-year-old woman who lives by herself in an apartment in a bustling university town. Lizbeth has extreme low vision and is legally blind. She experiences a profound hearing loss in one ear and moderate to severe loss in the other ear; persons speaking to her must stand next to her better ear to be understood. Lizbeth communicates through spoken language. She works 20 hours a week in the records department of a large national corporation, having expressed a preference for office work at her ITP meeting. She earns $5.50 an hour.

Lizbeth commutes to work each day via bus and the underground rapid transit system; her trip takes about 60 min each way. She arrives at work at noon and has lunch in the employee cafeteria before beginning work at 1:00. The employment specialist taught Lizbeth her first job, which was using an electronic scanning system to log documents. Lizbeth was also responsible for daily cleaning of the employee break room. This job entails restocking napkin holders, wiping down the tables and chairs, and a weekly cleaning of the microwaves and the refrigerator. In the 1 1/2 years she has been on the job, her coworkers have trained her to perform two additional jobs as part of her responsibilities. The employment specialist has faded out completely, and coworkers now provide any needed support. The employment specialist checks in with Lizbeth and the employer approximately once a month. Lizbeth loves her job. When a major earthquake struck, Lizbeth was just entering the underground transportation system; a passerby guided her to a phone where she was able to reach family members and arrange a safe journey home. The next day, she was disappointed to learn that her employer had "cancelled" work for the day; two days later, she eagerly returned downtown to do her job.

Tanya

Tanya is a 22-year-old woman who has recently completed high school. She is nonverbal and experiences severe myopia and a functional hearing loss; hemiplegia and low muscle tone affect her gait and speed in accomplishing fine motor tasks. Tanya works 10 hours a week at a local department store as part of a dispersed group that includes two other workers with disabilities. Her jobs include hanging and tagging mer-

chandise on the floor, and pricing merchandise in the warehouse.

Tanya arrives at work each morning after traveling by cab to the worksite. As she enters the store, and as she approaches the retail area where her first job is located, Tanya is greeted by coworkers who approach her within two feet and extend their hands. Tanya responds to this greeting by grasping and shaking the extended hand while orienting her face toward the employee. The employment specialist suggested this consistent greeting routine after Tanya had been on the job nearly 5 months but still experienced few social initiations despite her competent job performance. Tanya in turn was taught how to respond consistently to this greeting. Although Tanya rarely initiates social interactions, she is now known by name to all her coworkers who routinely greet and say good-bye to her; one coworker has invited her to watch the "soaps" together during lunch, which they happily do; another took her to purchase a Mother's Day card for that holiday; and a group of coworkers are planning to take Tanya to a baseball game.

Each of these scenarios illustrates a number of innovations that may facilitate integrated work for people with dual sensory impairments. The five that appear particularly important are discussed below.

Strategies for Facilitation

Heterogeneous Group Placements

Historically, two general approaches to supported employment have been evident: individual and group placement (Gaylord-Ross, 1988). In the individual placement model, the job coach completes an acquisition phase of teaching the job skills to the worker with disabilities. The job coach then gradually fades out of the work setting until the individual is working independently, with intermittent follow-up as needed. In the group placement model, a job coach permanently supervises a number of workers with disabilities at a worksite: enclaves and mobile work crews are examples.

One strategy for inclusion of individuals with severe and profound multiple disabilities in integrated employment requires a model that is infrequently reported in the literature: *dispersed heterogeneous groups*. The dispersed group model or proportionately integrated worksite model (Shiraga, 1990; Zivolich, 1986), in which several individuals with disabilities are dispersed throughout a central site (Sowers, Thompson, & Connis, 1979), reflects the principle of natural proportion, enabling integration and social interactions with nondisabled coworkers who are not typically present in enclave or mobile work crew models.

Heterogeneous grouping, or the grouping of person

with differing degrees and types of disabilities within one placement, is emerging as a successful classroom placement strategy (Pumpian, West, & Shephard, 1988). Grouping an individual with significant physical management and sensory adaptation needs together with an individual who is, perhaps, ambulatory and requires less intensive supervision enables instructional support staff to maximize training time for both individuals. Howard's placement in a pizza parlor as described above, for example, was possible due to the combination of a dispersed small group (three employees at one central site) and heterogeneity among employees in the group.

A dispersed heterogeneous group placement strategy in fact encompasses both of these issues: that of dispersal, which enhances integration and integration opportunities, and that of heterogeneity or diversity among group members. While the rationale for dispersal is clear, heterogeneity among group members might bring into question the ability to accomplish an individualized and satisfactory job match for each member of the group. Creation of an effective heterogeneous group requires attention to both the diversified skills and preferences of each group member and the diversified needs of the employer. Of the individuals selected as coworkers in Howard's group, for example, one had a long and successful prior history in restaurant prep work, while the other expressed pleasure in a job context that required a uniform. Thus, individualized job matching was, at least to some degree, still possible.

Persons with dual sensory impairments, who may require highly specialized adaptations and communication systems (see Jensema, 1979; Writer, 1985), are particularly likely to benefit from a dispersed heterogeneous group placement. Including Howard with other employees whose support needs were less intensive enabled the employment specialist to address Howard's unique needs in a cost-effective manner. The design and routine implementation of a portable tactile calendar (see Rowland & Schweigert, 1990; Writer, 1987) is an example of a time-intensive adaptation specific to dual sensory impairment that would not be possible had Howard been part of a homogeneous group of persons who all had dual sensory impairments.

Job Restructuring

Task redesign and provision of adaptations are strategies for promoting independence that have been widely discussed in the educational literature (Baumgart et al., 1982; York & Rainforth, 1987) and in the supported employment literature (see Martin, 1986). Sowers and Powers (1991b), for example, have identified four different specific strategies for job redesign, including (a) eliminating difficult steps through task redesign, (b) using devices and special equipment, (c) positioning the individual or modifying the environment to increase task access, and (d) identifying alternative strategies for completing difficult task steps.

Another strategy for accomplishing employment is job restructuring (Lee, Lynch, & Goetz, 1988) as illustrated in Teresa's and Ralph's experiences in a full-service restaurant. Job restructuring extends the concept of adaptation beyond individual tasks to the relationship among tasks. In job restructuring, the employer first specifies and identifies all of the company's needs. The employment specialist then visits the site and determines how current employees are doing their jobs. The employment specialist also identifies all of the tasks performed by the workers as part of their jobs. Based upon the job skills of the target employee with disabilities, restructured jobs are created by assigning one task currently performed by many different individuals to the target employee's position, or by recombining elements of several different job descriptions into new jobs that utilize the specific job skills of the target employee. An architectural firm employing 200 persons in San Francisco, for example, consumes approximately 400 cups of gourmet coffee daily, incidentally prepared by highly paid professional and support staff. A restructured job description identified ongoing preparation of coffee as one task in the job description of a supported employee.

Job restructuring was a strategy used in every placement made by BAPS. Focusing on the relationship among tasks, as well as the more traditional forms of adaptations that focus on within-task modifications, may enable workers with dual sensory impairments to maximize their contributions while avoiding the need for more costly adaptations such as continuous personal assistance (see Baumgart et al., 1982). By restructuring the salad bar prep into two separate tasks, Teresa was able to avoid the need for complex mobility skills within and around several confined spaces as a routine component of her work. This restructuring also reflected job sharing (Sowers & Powers, 1991a). In job sharing, a job that has traditionally been performed by one employee may be restructured into two or more parts, each performed by a different employee with disabilities. Provocative but preliminary evidence suggests such successful matches between employee competence and job requirements may be a factor associated with employment success (Moon, Goodall, Barcus, & Brooke, 1985; cf. Siegel & Gaylord-Ross, in press).

Volunteerism

Brown, as quoted in Rusch (1986b), and his colleagues (Brown et al., 1984) have argued that volunteer jobs in integrated settings constitute acceptable work for persons labeled severely mentally retarded when skill deficiencies preclude pay. They maintain that volunteer work is an effective strategy to prepare persons for subsequent paid work, and that volunteer work in

integrated settings significantly enhances an individual's quality of life in comparison with work in sheltered, segregated settings. Bishop and Falvey (1989) similarly argued that volunteerism that leads to change, through enhancing individual autonomy, decision making, and increased opportunities, is an appropriate work option. A volunteerism renaissance has been reported in the American population as a whole (Krantrowitz, 1989), suggesting the emergence of a new role for work performed without monetary compensation, but the role of volunteer work continues to be controversial (see Bellamy et al., 1984).

For an individual with disabilities to perform the same work as a volunteer that a person without disabilities performs for pay is unacceptable. Pumpian et al. (1988) have provided a detailed discussion of the issues pertaining to wages when, for example, school programs use community work sites as training sites. When an individual with disabilities does perform volunteer rather than paid work, Zivolich (1986) has presented a number of criteria to be met, including (a) the placement site must be an integrated, community-based nonprofit agency, (b) the specific task has previously been held by a volunteer, (c) consumer and family choice to do volunteer rather then paid work, (d) provision of Workmen's Compensation or appropriate insurance coverage, and (e) the principle of natural proportion is maintained. If these criteria are met, the volunteer site is treated in the same manner as a paid job site.

Each of these criteria was met before placement occurred for Arlene doing volunteer work in her local library. For Arlene, volunteer work in an integrated context, doing jobs that had always been designated as volunteer jobs, enabled her to enter the community at a rate consistent with her own health and safety requirements while simultaneously allowing her to build a resume in anticipation of future paid employment.

Natural Supports

Nisbet and Hagner (1988) have proposed a broader conceptualization of supported employment. They suggest that natural supports and informal interactions characteristic of natural work environments might take the place of job coach support. If the supported employment initiative is to successfully include workers with severe disabilities, they argue that the concept of support must be extended to include natural supports that are independent of paid agency personnel. Such supports can include help with the job as well as personal problems (Mitchell, Billings, & Moos, 1982) and formal support such as employee training, which is a natural component of the business environment.

Nisbet and Hagner (1988) proposed four alternative options to the job coach model, which vary along the dimensions of how and by whom initial training is

provided, how and by whom assistance is provided on an ongoing basis, the agency or person to whom persons in support roles are responsible, and the role (direct or indirect) played by the adult agency. Of the four options presented, the training consultant option was the one used to accomplish successful and stable integrated work for Lizbeth in the records department of a large national corporation. Consistent with the training consultant option, the employment specialist provided both direct initial training to Lizbeth and informed coworkers and supervisors as adaptations and changes in the usual records-keeping procedures were made. After this initial training phase was complete, Lizbeth's supervisor identified two additional jobs needing ongoing attention. Lizbeth's coworkers independently developed successful training strategies and periodically sought consultation from the employment specialist. Coworkers developed their own strategies for teaching Lizbeth new tasks, and the company rarely calls upon the adult service agency.

Lizbeth has dual sensory impairments and therefore might be expected to need intensive levels of support to meet her unique needs. Instead, when provided with models of appropriate adaptations that stressed her competence, Lizbeth's coworkers readily provided natural supports.

Facilitating Social and Communication Interactions

The role of social skills and social interaction in the workplace has received increasing attention. Available data suggest that for persons with mild and moderate disabilities, job terminations are often related to social factors rather than poor performance of discrete job tasks per se (Greenspan & Shoultz, 1981). Moon et al. (1985) delineated a number of advocacy functions performed by employment specialists, including facilitation of socialization between a worker with disabilities and his coworker. Nisbet and Hagner (1988), in arguing for the use of natural supports in the workplace (i.e., coworker support of employers with disabilities rather than use of an employment specialist model), presented a comprehensive discussion of the fundamentally social nature of the workplace.

Individuals with dual sensory impairments are faced with significant challenges in achieving social integration into natural environments (see Sisson, Van Hasselt, & Hersen, 1987, for review). Use of communication systems that violate the norms of conversational pragmatics because they require close proximity or sustained touching, or fluency in a "second language" (e.g., palmar signing), may limit the degree to which the individual is perceived as a participating member of the workplace. BAPS personnel speculated that this failure to achieve social integration may have been a primary factor in the job termination of one client. This client was abruptly terminated after 3 months on the job,

despite the fact that his job performance was not questioned. His coworkers complained that he was "too noisy."

The literature offers few published examples of effective social skills interventions with persons who have dual sensory impairments (Van Hasselt, Hersen, Egan, McKelvey, & Sisson, 1989). Systematic instruction in how to respond to social initiations, and brief "rap" sessions between the employment specialist and selected coworkers on ways to include the coworker with disabilities as described by Park et al. (in press) did appear to contribute directly to social integration for Tanya in her job at a local department store. Learning to respond consistently to a greeting routine increased Tanya's interactions with coworkers. Provision of systematic social skills training using behavioral technology (see Snell, 1987) was also implemented with Teresa in her job at Pizza Hut. She greeted a coworker by activating an audiocassette that played a tape saying hello and requesting her time card. The coworker then greeted Teresa and gave her the card, which she subsequently punched in. The training led to consistent interactions with coworkers and also produced further, unprogrammed exchanges of increasing duration, as reported by Gaylord-Ross, Johnson, Park, Lee, and Goetz (in press).

The importance of a personal voice in establishing one's self as part of a sustained social network cannot be overlooked. People with dual sensory impairments, by the very nature of their disability, often lack a personal voice that is readily understood. A growing literature addressing augmentative and alternative communication systems, however, has documented many innovations that enable all persons to communicate (Gee et al., in press; Mirenda & Iacono, 1990; Wacker, Wiggins, Fowler, & Berg, 1988). BAPS clients utilized a range of communicative means, from Tanya's non-verbal greeting routine to Teresa's microswitch-adapted tape-recorded message. The employment specialist played a critical role in creating and facilitating use of such adaptations, although the need for highly specialized communication systems does not necessarily preclude alternative models of support. Provision of resources needed to enable employees to participate in the social context of the workplace, however, is an essential feature of integrated work models that encompasses *all* employees.

Future Directions

While Kregel and Wehman's (1989) analysis clearly identified shortcomings in outcomes of the supported employment initiative, a number of policies, practices, and procedures are emerging that do support the inclusion of all persons in integrated work. Reasons for optimism include such factors as coworker support models (Nisbet and Hagner, 1988), rapid growth in

technology and adaptations (Sowers & Powers, 1989, 1991b), and additional strategies such as those identified in this paper—dispersed heterogeneous small group placements, job restructuring, volunteerism, and facilitation of social and communicative interactions.

The strategies highlighted here are those that emerged as the BAPS project, drawing upon the growing supported employment literature (see Wehman & Moon, 1988), worked to achieve integrated community employment for its clients. Selection of the strategies highlighted here is therefore not based upon rigorous empirical or experimental analysis. They are offered instead as promising practices in need of more comprehensive evaluation. The specific practices utilized by BAPS are also not all new. Job restructuring represents an extension of the familiar concept of adaptations; facilitation of social interaction has a well-established empirical basis in the literature. What characterizes these practices as innovative, however, is their application with persons who have historically been excluded from full participation in community life (see Sailor, Gee, Goetz, & Graham, 1988). Therefore, they reflect a further example of how "best practices" developed for persons with severe disabilities may have great relevance and appropriateness for the population of persons with dual sensory impairments (Goetz, 1987). When coupled with the emergence of alternative research paradigms (see Stainback & Stainback, 1989) and measurement strategies (see Haring & Breen, 1989) that address quality-of-life outcomes, it would appear that both the conceptual and empirical bases for achieving meaningful work in integrated social contexts for all persons are within reach.

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Each of these criteria was met before placement occurred for Arlene doing volunteer work in her local library. For Arlene, volunteer work in an integrated context, doing jobs that had always been designated as volunteer jobs, enabled her to enter the community at a rate consistent with her own health and safety requirements while simultaneously allowing her to build a resume in anticipation of future paid employment.

Natural Supports

Nisbet and Hagner (1988) have proposed a broader conceptualization of supported employment. They suggest that natural supports and informal interactions characteristic of natural work environments might take the place of job coach support. If the supported employment initiative is to successfully include workers with severe disabilities, they argue that the concept of support must be extended to include natural supports that are independent of paid agency personnel. Such supports can include help with the job as well as personal problems (Mitchell, Billings, & Moos, 1982) and formal support such as employee training, which is a natural component of the business environment.

Nisbet and Hagner (1988) proposed four alternative options to the job coach model, which vary along the dimensions of how and by whom initial training is

provided, how and by whom assistance is provided on an ongoing basis, the agency or person to whom persons in support roles are responsible, and the role (direct or indirect) played by the adult agency. Of the four options presented, the training consultant option was the one used to accomplish successful and stable integrated work for Lizbeth in the records department of a large national corporation. Consistent with the training consultant option, the employment specialist provided both direct initial training to, Lizbeth and informed coworkers and supervisors as adaptations and changes in the usual records-keeping procedures were made. After this initial training phase was complete, Lizbeth's supervisor identified two additional jobs needing ongoing attention. Lizbeth's coworkers independently developed successful training strategies and periodically sought consultation from the employment specialist. Coworkers developed their own strategies for teaching Lizbeth new tasks, and the company rarely calls upon the adult service agency.

Lizbeth has dual sensory impairments and therefore might be expected to need intensive levels of support to meet her unique needs. Instead, when provided with models of appropriate adaptations that stressed her competence, Lizbeth's coworkers readily provided natural supports.

Facilitating Social and Communication Interactions

The role of social skills and social interaction in the workplace has received increasing attention. Available data suggest that for persons with mild and moderate disabilities, job terminations are often related to social factors rather than poor performance of discrete job tasks per se (Greenspan & Shoultz, 1981). Moon et al. (1985) delineated a number of advocacy functions performed by employment specialists, including facilitation of socialization between a worker with disabilities and his coworker. Nisbet and Hagner (1988), in arguing for the use of natural supports in the workplace (i.e., coworker support of employers with disabilities rather than use of an employment specialist model), presented a comprehensive discussion of the fundamentally social nature of the workplace.

Individuals with dual sensory impairments are faced with significant challenges in achieving social integration into natural environments (see Sisson, Van Hasselt, & Hersen, 1987, for review). Use of communication systems that violate the norms of conversational pragmatics because they require close proximity or sustained touching, or fluency in a "second language" (e.g., palmar signing), may limit the degree to which the individual is perceived as a participating member of the workplace. BAPS personnel speculated that this failure to achieve social integration may have been a primary factor in the job termination of one client. This client was abruptly terminated after 3 months on the job,

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