

“Getting Your Wheel in the Door”: Successful Full-Time Employment Experiences of Individuals with Cerebral Palsy Who Use Augmentative and Alternative Communication

David McNaughton, Janice Light, and Kara B. Arnold

Department of Educational and School Psychology and Special Education (D.M.), and Department of Communication Sciences and Disorders (J.L., K.A.), The Pennsylvania State University, University Park, Pennsylvania, USA

Eight individuals with cerebral palsy who use augmentative and alternative communication (AAC) and were employed full time participated in a focus group discussion that was conducted on the Internet. Six major themes emerged from the discussion: (a) descriptions of employment activities, (b) benefits of employment and reasons for being employed, (c) negative impacts resulting from employment, (d) barriers to employment, (e) supports required for employment, and (f) recommendations for improving employment outcomes for individuals with cerebral palsy who use AAC. Factors identified as key to preparation for successful employment included appropriate education and vocational experiences. Community networks, government policies, and computer technology were identified as important supports for obtaining employment. Personal characteristics, technology, supportive coworkers, personal care assistance, and family supports were described as important supports for maintaining employment.

KEY WORDS: assistive technology, augmentative and alternative communication (AAC), cerebral palsy, employment, focus group, Internet

In today's society, employment is strongly tied to issues of financial independence and self-esteem (Blackorby & Wagner, 1996; Odom & Upthegrove, 1997; Schloss, Wolf, & Schloss, 1987). For individuals with severe physical disabilities, however, full-time employment has remained an elusive goal. The most recent data from the United States indicate that less than 10% of individuals with severe physical disabilities in that country are employed (U.S. Census Bureau, 1997).

In the past, there was little expectation that individuals with severe disabilities could participate in competitive community-based employment activities (Wehman & Moon, 1988). More recently, recognition of the benefits of employment in integrated community settings has led individuals with disabilities and their families to advocate for paid competitive employment (Baer, Simmons, Flexer, & Smith, 1994). To assist individuals with disabilities to achieve and maintain employment, it is critical to develop a thorough understanding of the demands of the workplace and effective strategies for meeting those challenges.

One important source of information about barriers to employment and strategies to overcome these barriers is the experiences of employed individuals with severe disabilities. Odom and Upthegrove (1997) provided a detailed description of the supports that were necessary for an individual with cerebral palsy who used augmentative and alternative communication (AAC) to obtain and maintain a job. Extensive training in the use of an AAC device, as well as on-the-site job modifications, was necessary to support participation in the workforce. Similarly, Light, Stoltz, and McNaughton (1996) investigated the experiences of 25 individuals who used AAC and were employed within the community. These individuals had a wide variety of skills and educational backgrounds and were engaged in many different employment activities. Participants identified a wide variety of barriers to obtaining and maintaining employment: skill limitations, lack of education and job preparation, attitudinal barriers, architectural barriers, transportation barriers, technology limitations, and communication breakdowns. Factors associated with suc-

successful employment included access to assistive technology, effective communication skills, and a supportive work environment.

Light et al.'s (1996) study provided an initial description of the experiences of individuals who used AAC and were employed in the community. However, only 16% of the participants were employed full time, making it unclear whether the results of the study can be generalized to the specific experiences of individuals with cerebral palsy who are employed full time in community-based employment. Furthermore, the study used a written survey to collect data and thus provided only a limited overview of barriers and supports. More detailed data are required to develop models of successful employment that might be used by others making the transition into the workforce.

Research Objectives

To implement changes that will result in positive employment experiences for individuals with cerebral palsy who use AAC, it is important to fully understand the barriers and supports to successful employment for this population. The purpose of this study was to gather detailed information about the experiences of individuals with cerebral palsy who use AAC and were successfully employed full time in the community. The specific objectives of this study included gathering demographic information regarding individuals from the target population, identifying the types of employment positions that these individuals held, identifying the positive and negative impacts of employment, determining barriers to employment and supports required for successful employment, and identifying recommendations for improving employment outcomes for other individuals with cerebral palsy who use AAC.

METHOD

Research Design

A focus group methodology was chosen to gain a greater understanding of the successful employment experiences of individuals who have cerebral palsy. Focus groups typically consist of 8 to 10 participants and a moderator and take place in one location over several hours (Vaughn, Schumm, & Sinagub, 1996). However, there are only a small number of individuals who use AAC, have cerebral palsy, and are successfully employed full time in the community. Because of this, a decision was made to hold the focus group discussions on an Internet bulletin board system. This forum allowed the eight participants to engage in discussion despite their dispersed geographic locations. The forum also allowed the participants to review and contribute to discussions at a rate and time that were convenient and appropriate for them.

Participants

Selection Criteria

Participants were selected based on the following criteria: (a) they had cerebral palsy, (b) their speech was inadequate to meet their daily communication needs, (c) they used AAC, and (d) they were employed at least 35 hours per week in paid competitive employment (i.e., not in a sheltered workshop).

Recruitment

Participants were recruited using four techniques: (a) announcements in consumer newsletters; (b) announcements on disability-related listservs; (c) direct mailings to rehabilitation professionals who worked with individuals who were employed, had cerebral palsy, and used AAC; and (d) direct mailings to individuals with cerebral palsy who used AAC and who were known by the researchers to be employed.

Description of Participant Characteristics

Eight individuals participated in this study. The participants were all male and ranged in age from 30 to 57 years. Education of the participants ranged from completion of some college credits to the completion of a doctoral degree. A number of different AAC systems were used by the participants: four used Liberators™,¹ two used EZ Keys™² software on laptop computers, one used a DeltaTalker™,³ and one used a combination of speech with an amplifier, speech interpreter,⁴ and Speech-to-Speech⁵ telephone services. All of the participants earned greater than min-

¹The Liberator is a dedicated, voice output communication device. Additional information is available from the Prentke Romich Company, 1022 Heyl Road, Wooster, OH, USA 44691 and at www.prentrom.com.

²EZ Keys is a software program that uses linguistic prediction to provide computer access and environmental control. Additional information is available from Words+, 1220 West Ave. J, Lancaster, CA, USA 93534-2909 and at www.words-plus.com.

³The Delta Talker is a dedicated, voice output communication device. Additional information is available from Prentke Romich Company, 1022 Heyl Road, Wooster, OH, USA 44691 and at www.prentrom.com.

⁴A speech interpreter is an individual who is specially trained to be able to understand the speech of a wide variety of speakers with speech disabilities. The speech interpreter facilitates conversations with others by listening to the speaker with a speech disability and then restating what the individual has said word for word. More information is available at www.stsnews.com/Pages/Whatis-SpeechtoSpeech.html.

⁵Speech-to-Speech (STS) is a telephone relay service for people with a speech disability. The service enables people with a speech disability to communicate over the telephone via a speech interpreter, who restates, word for word, what the individual with a disability has said. Additional information is available at www.stsnews.com.

imum wage and considered their salaries to be their main source of income. A summary of the demographic information for each participant is included in Table 1.

Materials

The focus group discussions were conducted using ConferWeb 2.1,⁶ a password-protected Internet bulletin board system that allows several individuals to participate in text-based discussions on a variety of topics. ConferWeb allowed participants to access topics currently under discussion by selecting links listed on an index page. Participants were able to post messages to the conversation by entering their names and responses into a specified area at the bottom of the discussion text.

Procedures

Once participants had provided their consent to participate, they received a brief questionnaire, which was used to gather information on their current employment, previous employment activities, and use of AAC systems.

The procedures for the focus group discussion were based on the best practices described by Vaughn et al. (1996) and were adapted to meet the challenges of an Internet-based focus group discussion (McNaughton, Light, & Groszyk, 2001). Prior to beginning the focus group discussions, participants were instructed on how to access and post messages to the discussion site on ConferWeb. The moderator then provided instruction on how to participate within the focus group. Specifically, the participants were asked to (a) visit the discussion site two to three times per week, (b) contribute to each topic's discussion, and (c) attempt to present differences of opinion in a noncritical manner. A welcome page was established within the site to provide participants with the opportunity to practice posting messages and to introduce the members of the focus group to one another.

⁶Additional information is available at www.caup.washington.edu/software/conferweb.

TABLE 1: Demographic Characteristics of the Participants

Variable	Participant							
	Michael	Brendan	Ken	Gary	Joe	Bruce	Sean	John
Gender	Male	Male	Male	Male	Male	Male	Male	Male
Age	31	30	44	36	36	57	37	46
Disability	CP, LD, VI corrected, HI corrected	CP, VI corrected	CP	CP	CP	CP, VI corrected, HI corrected	CP	CP
Mobility	Power wheelchair	Power wheelchair	Walks independently	Power wheelchair	Power wheelchair	Power wheelchair	Power wheelchair	Power wheelchair
Education	2 Master's	Bachelor's	Some college	Bachelor's	Bachelor's	Doctorate	Associates	Master's
Communication means	Speech, EZ Keys	Liberator, writing in air with head	DeltaTalker, speech	Liberator, speech	Speech, EZ Keys	Speech with amplifier, Speech-to-Speech	Liberator, speech	Liberator vocalizations, gestures
Length of use, current AAC	2 yr	7 yr	3 yr	6 yr	5 mo	5 yr	3 yr	9+ yr
Writing system	Standard keyboard, portable AAC device	Portable AAC device	Information not provided by participant	Standard keyboard, portable AAC device	Portable AAC device	Pencil/paper, standard keyboard, word prediction	Standard keyboard	Personal computer, portable AAC device
Access technique(s)	Mouth stick	Infrared receiver	Computer trackball	Direct selection, standard keyboard	Head pointer	Finger, standard keyboard	Finger, standard keyboard	Head pointer

CP = cerebral palsy; LD = learning disability; VI = visual impairment; HI = hearing impairment.

Following the introductory messages, the moderator began to introduce topics for discussion, with a new topic being introduced on the home page approximately every 5 days. Each new topic was designed to address one of the research objectives (e.g., identifying strategies for maintaining employment) and was organized on a separate "page" within the bulletin board system. Nine topics were introduced by the moderator (see Appendix A for a complete list of questions posted by the moderator throughout the discussion). One additional topic, "Giving Occupational Therapists Input," was introduced by a participant.

The moderator monitored the discussions throughout the 9-week duration of the discussions. On the site, he thanked participants for their comments and also asked questions of participants to clarify any statements that were unclear. The moderator sent reminders using private e-mail to individuals who had not posted messages related to a particular discussion topic within 7 days; approximately 23 reminders were sent to the 8 participants over the 9-week period.

After 5 weeks, the moderator sent a message to each of the participants via e-mail to inform them that the discussions would be ending in the near future and to remind each of them to post a message to any discussion topic that they had not yet addressed. Owing to the numerous postings of the group members in response to these messages, the discussions continued for approximately 4 more weeks.

During the 9 weeks, the participants posted a total of 7,054 words on 10 discussion topics. A thank you letter and summary of the themes and subthemes that were evidenced in the discussion were sent to each of the participants as a "member check" (Vaughn et al., 1996) approximately 8 weeks after the last posting to the discussion. The participants were asked to confirm that the summary of the discussion reflected their own understanding and contributions. Participants were also asked to provide any additional comments relevant to the discussion topics.

Data Analysis

Participants' postings to the discussions were unitized according to Lincoln and Guba's (1985) definition of a unit as the "smallest piece of information about something that can stand by itself...interpretable in the absence of any additional information other than a broad understanding of the context in which the inquiry is carried out" (p. 345). The unitized data were then placed into a table that contained four columns: (a) each participant's identification code, (b) title of the discussion strand in which the posting was entered, (c) numeric code (for the coding theme), and (d) unitized datum (i.e., participants' comments).

Coding themes were developed post hoc based on a review of the participants' contributions, and opera-

tional definitions were created for the themes (Vaughn et al., 1996; Yin, 1994). These operation definitions were used to code samples of text, and the operational definitions were reviewed and modified, as necessary. Eight themes were identified: (1) descriptions of employment activities, (2) benefits of employment and reasons for being employed, (3) negative impacts of employment, (4) barriers to employment, (5) supports to employment, (6) recommendations for overcoming barriers, (7) issues specific to individuals with cerebral palsy but not related to employment, and (8) unrelated statements. Appendix B contains the operational definitions of the coding themes.

The researcher assigned a numeric code to the unitized data based on the content of the statement and the operational definitions of the themes. After all of the data were coded, a reliability check was performed. Twenty percent of the data were selected at random to be coded by both the researcher and a graduate student who had received training in the operational definitions of the coding themes and coding procedures. The unitized data were presented with appropriate amounts of adjoining text so that a context for the comment was provided. An agreement score of .87 was calculated using Cohen's kappa, a procedure that corrects for chance agreement among observers in situations in which a response is categorized into one of a number of categories (Suen & Ary, 1989). Kappa values above .81 are considered to be "almost perfect" (Landis & Koch, 1977). Disagreements were resolved through discussion.

RESULTS

The results of this study are discussed in this section, including the demographic information on the jobs held by the participants and the six major coding themes: (a) descriptions of employment activities, (b) benefits of employment and reasons for being employed, (c) negative impacts of employment activities, (d) barriers to employment activities, (e) supports to employment activities, and (f) recommendations for improving employment outcomes.

Descriptions of Employment Activities

The participants represented a number of different employment backgrounds: a teacher, a software engineer, a database manager, a policy analyst, an independent-living advocate,⁷ a research analyst, an Internet researcher/editor, and an educational consultant and Web information specialist. All of the individuals held jobs that required significant levels of education and strong communication skills. All participants

⁷An Independent Living Advocate is an individual who supports and facilitates autonomous living for people with disabilities. They may assist in such tasks as recruiting personal care attendants and finding wheelchair-accessible housing.

reported use of computers in the workplace; for four of the eight individuals, computer expertise was an essential requirement of their job (e.g., editing Web sites, managing databases). Participants reported working for three types of employers: government (Michael, Ken, Bruce, John), disability advocacy organizations (Gary, Joe), and private industry (Brendan, Sean). The number of hours worked ranged from 35 to 60 hours per week, and the number of years at their current job ranged from 1 to 28. All but one individual had held jobs with different employers prior to their current positions. Information on the jobs held by the participants is provided in Table 2.

A summary of the following four coding themes, subthemes, and examples of issues raised by participants is presented in Table 3.

Benefits of Employment and Reasons for Being Employed

Three subthemes emerged from the participants' discussion of the benefits of employment: personal

expectations, financial benefits of employment, and positive experiences in the workplace.

Personal Expectations

The need to be employed to fulfill personal expectations or goals was an important subtheme addressed by the focus group. Specifically, the group members raised the following issues: their desire to achieve success, to put their minds and education to use, and to have an impact on the lives of others with disabilities.

Several of the participants described the importance of productive employment for achieving their idea of success. John conveyed this need: "Full-time employment used to be important to me because it is the norm. You grew up, went to school, and then you work until you retire. Middle class values, eh? I'm a middle-class person."

Michael's description of his motivation to be employed clearly communicated the fact that his criteria for success were the same as any other individual's:

TABLE 2: Employment Characteristics of the Participants

Variable	Participant							
	Michael	Brendan	Ken	Gary	Joe	Bruce	Sean	John
Current job title	Teacher	Software engineer	Database manager	Policy analyst	Independent-living advocate	Research analyst; founder of telecommunications system	Senior editor/ researcher for Internet company	Educational consultant/ Web information specialist
Current job duties	Teaching high school students with disabilities	Developing and troubleshooting software	Maintaining databases for municipal government	Analyzing policies that affect individuals with disabilities	Advocating for individuals with disabilities; discussing legislation with policy makers	Conducting survey research; advocating for and developing telecommunications system	Editing Web sites	Conducting Internet research
Years at current job	1	2.5	3.5	5.75	3	28	1	5.5
Previous employment	Laboratory assistant	Ambassador for AAC company	Park maintenance	Worked with students who use AAC in a school setting	Worked in personal assistance program	Crime statistician	None	Assistive technology consultant
Work hours per week	40	40+	35+	37.5	40	40–60	35+	35+
PCA at home/work?	Yes	Yes	No	Yes	Yes	Yes	No	Yes
PCA hours per week	35	40	NA	35	10	30 (at work)	NA	5

PCA = personal care attendant; NA = not available.

TABLE 3: Coding Themes, Subthemes, and Examples of Issues Discussed by Participants

<i>Coding Theme</i>	<i>Subtheme</i>	<i>Example Issues Discussed by Participants</i>
Benefits of employment and reasons for being employed	Personal expectations	Achievement of success Positive impact on self-esteem Desire to put mind and education to use Impact on the lives of others with disabilities
	Financial benefits	Financial need Financial independence
	Positive experiences in the workplace	Enjoyment of work activities Contact with other people and stimulation
Negative impact of employment activities	Physical demands	Fatigue from full-time work
	Decreased time for other activities	Decreased time available for activities of daily living Decreased time available for social activities/personal time Decreased time and energy for advocacy
	Societal prejudice	Not recognized as an employee by some coworkers
Barriers to employment activities	Attitude barriers	Negative attitudes of society and employers toward individuals with disabilities
	Educational barriers	Low expectations of educators Inappropriate education
	Technological barriers	Limitations of AAC technology Technological breakdowns Limitations of technology support services
	Policy and funding barriers	Lack of funding for assistive technology Inefficiency of vocational rehabilitation services Under-representation of individuals with disabilities in the Vocational Rehabilitation System
	Personal care/support service barriers Transportation barriers	Lack of reliable personal care attendant services Difficult to schedule Long travel time
Supports to employment activities	Personal characteristics	Commitment to employment Strong work ethic Determination Time management skills
	Education and experience	Educational background Volunteer experience Work experience
	Technology	Specific device features that support participation (e.g., voice output) Posting resume on the Internet
	Policies and funding	Government legislation (e.g., ADA) Government programs (e.g., vocational rehabilitation) Government funding for PCAs
	Family supports	Transportation to work Personal care
	Workplace supports	Mentoring from coworkers Networking with coworkers and supervisors

If somebody asks me why I work full time, I would ask him or her the same thing. Why wouldn't I work? I'm not rich. Everybody works. Yes, I have disabilities. However, it does not mean that I'm not a human being. Why did I go to school? Why does anybody go to school? It is to learn. Me, too. If I did not go to school and do not want to work, what is the difference between a dog and me? Last time I checked, I was still a human being.

Meeting their personal goals for success had a positive impact on the participants' self-esteem. Sean commented, "My self-esteem is at an all-time high. Paying the bills and putting food on the table makes me feel great and worthy." Joe added, "...having a full-time job, in my opinion, breeds self-esteem." Bruce expressed similar sentiments: "Work gives me self-esteem and enables me to be a role model."

Another motivator for participation in employment activities for these individuals was the importance of putting their minds and education to use and making a positive contribution to society. Sean contributed the following to the discussion: "Sure, I could have stayed home and collected benefits from the government, but I chose not to since I am well educated and I wanted to put my mind to use."

Participants also spoke of their desire to work to achieve their personal goals of serving as a role model and improving the lives of others with disabilities. As Michael commented, "I think even some students with disabilities think that they cannot get a job or they don't know the outside world. It's sad, but special education teachers have to teach what it's like out there. That's why I became a teacher." Bruce stated that working "enables me to be a role model."

Financial Benefits

The second subtheme that was identified in the group's discussion of the benefits of employment was the financial benefits of being employed. The participants discussed the financial necessity of work and the financial independence that employment afforded them. John commented on the financial necessity of employment: "Why do most people work full time? Because they don't have the money not to work full time. I am the head of my family, and I have bills and financial obligations." Gary also expressed the importance of work to achieving his goals:

I think there are several reasons why I want to be full time and I would bet they're the same reasons as the rest of the working population. I have dreams of doing different things with my life, like owning my own home, getting married and having kids, going to different places, all of which take money!

In addition to working to meet current financial needs, some of the participants recognized the potential for long-term financial independence provided by employment. Bruce stated, "If I work for 6 or more years, I can retire at full pay."

Positive Experiences in the Workplace

The third subtheme that emerged from the discussion of the benefits of full-time employment involved the positive experiences that the participants had in the workplace. For example, the participants discussed how much they enjoyed their work activities. As Joe commented, "My current position as an advocate enables me to do what I love most: WRITING." John expressed a similar attitude toward his work activities: "As I get older, I am deciding that enjoying what you do is more important than working full time. I am just lucky to happen to like working full time. Hey, it beats sitting at home even if I had the million [dollars]."

In addition to enjoying work activities, the participants also commented on the stimulation that they experienced as a result of their interactions with others in the workplace. Sean discussed the positive effect that full-time employment had on his life: "Working full time has broadened my world."

Negative Impacts of Employment

Although all of the participants felt that full-time employment had many benefits, some also discussed the negative impact that employment activities had on their lives. Three subthemes were identified: physical demands of employment, time demands, and societal prejudice.

Physical Demands of Employment

Many of the participants said that full-time employment was very tiring and posed significant physical demands. For Gary, this was what he liked least about working: "The daily grind is most challenging for me." Some of the participants were reluctant to address this concern with supervisors and felt it was an issue they needed to resolve on their own. As Michael observed, "Working all day is not easy, but I knew it already. I didn't say anything about it at my job. Either I make it or I don't."

Time Demands

The group also discussed the time constraints that full-time employment placed on activities of daily living. Gary commented on how these time constraints had had an impact on his life: "I think the biggest challenge with having a full-time job is balancing everything in your life. When I got my full-time job, I found myself having to balance a host of things. Making sure things like the shopping and cleaning got done in a timely manner." Brendan added, "I would say I spend about 9 hours a day doing work-related stuff. After that I have to take care of my personal business (shopping, paying bills, so on). Sometimes I don't have dinner until 8 o'clock."

Full-time employment also had a negative impact on the participants' opportunities for social interactions with friends and family members. Gary explained, "I also had to make sure I made time to take care of me! For example, making sure I made time to be sociable and go to movies, out for dinner, or just hanging out with friends."

In addition to having an impact on the amount of time available for activities of daily living and social interaction, the participants also discussed the negative impact of full-time employment on their ability to advocate on behalf of other individuals with disabilities, which many described as a responsibility. Stated Bruce, "Due to the limitations of the disability, the job and the disability eat up more time than for an able-bodied person. That means that most working people with speech disabilities don't have the resources to advocate."

Societal Prejudice

For the most part, the participants described their relationships with their fellow workers as positive. However, two participants did describe a small number of episodes of prejudice in the workplace. Ken related the following incident: "My first day on the job, I was asked to leave the employee credit union because the staff believed that I was a client who had wandered in and not an employee trying to open an account."

Barriers to Employment Activities

The third theme that arose from the focus group discussions was barriers to full-time employment. Participants identified six such barriers: attitudinal, educational, technological, policy and funding, personal care/support service, and transportation.

Attitudinal Barriers

Negative attitudes toward people with disabilities were a frequently discussed issue, with many of the participants stating that this was the most significant barrier to successful employment activities. Joe wrote,

...but the REAL barrier, in my opinion, are [sic] people's stagnant and outdated attitudes toward pwds [persons with disabilities], especially people with speech disabilities...The biggest stigma for a person with a speech disability is that other people perceive us as being retarded. This mentality held by employers in the "real world" has prevented us (people who use AAC) from showcasing our talents and abilities.

Michael, a certified special education teacher with two master's degrees, struggled to find work as a teacher when many uncertified individuals were being hired by school districts. He discussed the reactions

of his potential employers to his disabilities, despite his credentials:

When people see me, they do not see me. They just see a person in the wheelchair. During the job interviews, they asked me how I would teach students. At that time, I had a teaching credential and advanced degrees. There are so many teachers without any teaching credentials in California.

Bruce confirmed Michael's perceptions of negative employer attitudes toward individuals with disabilities with an example from his own experience working at a hospital:

Finding employment was particularly difficult for someone with a visible disability before legislation mandating employment of the handicapped. Many people with cerebral palsy who walk with an awkward gait and talk with slurred speech are also mentally retarded (although many of them are not). Because the temptation to stereotype all people with cerebral palsy at the hospital as mentally retarded patients was strong, the staff had trouble viewing me as a professional person.

Educational Barriers

The second subtheme discussed by the participants involved the educational barriers to employment. Two interrelated issues were revealed. First, the low expectations of society in general for individuals with disabilities had also been experienced by the participants when they attended school. Several of them reported that the educators they had encountered had inappropriately low expectations for their students, which resulted in limited and inappropriate educational experiences. Michael described his educational experiences to the group:

I think some special education teachers are too easy on students. My first math teacher wanted me to do basic math. At that time, I was 15 and had just come to the States [from another country]. I knew how to do algebraic equations already. My first IEP [Individualized Education Plan], my mother had to fight for me to take Algebra 2.

Joe also felt that his teachers had not expected that he would ever have a job; as a result, they provided little in the way of education to prepare him for the workplace. As Joe commented, "Personally, I didn't experience such training [to prepare to have a job] during my elementary days. The thought of a severely disabled child holding a job later in life was foreign to my teachers."

Technological Barriers

The participants also discussed barriers to employment created by AAC technology. The first problem that they addressed related to limitations of the technology in general. Joe had the following comments:

There's one drawback to using AAC: lack of spontaneity. For instance, when I'm on the phone and the person asks me a question that I'm not prepared for, I must type out my question or questions, leaving the person to wait for my response... Whenever I replied to a job ad in the newspaper, they would hang up on me because they didn't understand me, nor did they take the time to understand me. This was very hard on me mentally. Trying to get my 'wheel' in the door was frustrating.

Joe also mentioned multitasking problems associated with the AAC device that he used: "Another problem that I'm facing is my inability to take notes on my Powerbook while I use my voice output. It's very frustrating. I'm still trying to figure out a way to combat this."

The second issue addressed by the participants involved the problems that technology breakdowns created. As one individual commented, "Once in a while I will be talking away and my [AAC system] will lock up for no apparent reason for an hour or so, and then it's fine. I need to send it in [for repair], but the last time I did, they had it for 6 weeks." This comment touches on another barrier related to technology: inadequate technical support services. One participant found that even when services were available, they were not helpful: "I had more problems with the person who came from [the manufacturer] than with my AAC system. She didn't have any formal education on computers. I knew more than she did."

Policy and Funding Barriers

The participants also identified policy and funding barriers as impediments to employment. This discussion focused on the lack of funding for AAC devices and the slow service provided by the state-operated Office of Vocational Rehabilitation (VR) system.⁸ For example, Joe discussed the process that he went through to obtain his AAC device: "I had to wait 3 — yes, 3 — years to get financial assistance from my state VR services for being evaluated and getting assistance in purchasing my AAC device. Way too long! The final straw was when they lost my paperwork in [the state capital] — that extended my waiting for another 4 months!" Brendan experienced a similar situation: "Yes, I agree with Joe; VR takes too long with providing equipment and services to the clients. Through VR, it took about 2 years to get my Liberator."

Some of the individuals felt that the difficulties with vocational rehabilitation services were a result of the paucity of individuals with disabilities who worked within the system, resulting in a lack of advocacy for individuals with severe disabilities. Joe commented, "I

feel the disabled should be VR counselors, but few choose to become one..."

Personal Care/Support Service Barriers

Owing to the nature and severity of the participants' disabilities, many of them relied on the services of personal care attendants to assist them with activities such as personal care, eating, and transportation, as well as the handling of paperwork. The participants noted that finding reliable and appropriate personal care attendants to assist in these activities was critical to successful employment. Unfortunately, it was also a very difficult task. As Ken stated, "...[it is very difficult] getting and paying for a reliable personal care attendant who doesn't do things that are embarrassing to me on my job."

Transportation Barriers

The final subtheme discussed by the participants involved the transportation barriers to participation in the workplace. Individuals described difficulties with scheduling transportation from service providers for individuals with disabilities and with the length of the trips involved. Ken commented that "transportation has been the hardest" of all employment-related challenges.

Supports to Employment Activities

The participants in the focus group discussion recognized that although there were many barriers to obtaining and maintaining successful employment, they had experienced many forms of support along the way that assisted them in successfully securing and maintaining full-time employment. These supports included their personal characteristics, their education and experience, technology, policies and funding, family supports, and workplace supports.

Personal Characteristics

The participants reported that personal characteristics such as a strong commitment to employment, hard work, determination, persistence, and good time management skills had been critical to securing full-time employment. Bruce described the particular need for individuals with disabilities to demonstrate these characteristics:

Handicapped employees often value their jobs more and exert extra effort to do a good job. They have difficulty finding jobs and try hard to keep the ones they have. Most of them have especially good work and attendance habits. I was the only social worker who wore a white shirt and tie every day, which reinforced my professional image and differentiated me from the clients. Every chance I could, I used vacation time when I was sick in

⁸State Offices of Vocational Rehabilitation provide state-sponsored employment counseling and support services for individuals with disabilities in the United States.

an attempt to keep a good sick leave record. Call it paranoia—maybe? Perhaps, however, some people with disabilities have a healthy kind of anxiety about their jobs that makes them better workers. They may feel that they do not have the option of goofing off that other workers do.

Gary also discussed the importance of a strong and positive work ethic to maintain employment: “I had to prove to them a number of things: (1) I was a hard worker and was willing to try whatever they put in front of me, (2) I was committed to working, (3) I wanted to get ahead in life, [and] (4) I cared about what I was doing.”

In addition to exhibiting a strong work ethic, the participants felt that persistence and determination were important for achieving successful employment. When discussing his employment search, Brendan commented, “I was persistent and a pain in the butt until I got it [the job]. Sometimes you have to be that way.” Gary stated, “Another thing that has helped me to get to where I am now is my determination to succeed and also what I want in life.”

Joe reported that well-developed time management skills were also critical to successful employment: “As people with disabilities, we often inherited time management skills. For example, we don’t have the luxury of being as spontaneous as we’d like because of the restraints that society has put on us.”

Education and Experience

The participants felt that a strong education and previous work experience provided the best foundation for obtaining employment. Michael emphasized the importance of a strong education: “How to find a job? First, education. It does not matter how wonderful you are, you have to have good education.”

Brendan recognized that his preparation for the “world of work” had been facilitated by his teachers: “All of my special education and regular education teachers pushed me hard. They all knew I wanted to go to college and get a job. They did everything they could and then some, because, I think, they believed in my potential.” Bruce also described the impact of his educational experiences:

The supervisor who finally hired me was pleased to lure a PhD into a state job which only required a master’s [degree]. My doctorate appeared to compensate for the disability. Jokingly, I wondered what the exchange values were in this process. How much education compensates for how much of a disability? Had I held an MD but been blind and deaf, would I still have been offered that same master’s level job (if accommodations enabled me to do the work required)? Other people with disabilities tell me of success obtaining employment because of being unusually overqualified.

The participants also recognized the importance of unpaid work in the form of internships or volunteering, for example, as a means of gaining practical skills and experience and making contact with potential employers. Gary related the benefits of volunteer experience: “The way I got started was by volunteering at a local school. That’s when someone noticed me and my abilities.”

Technology

The participants all identified technology as an important support in obtaining and maintaining employment and felt that many of the specific features of the AAC devices they used were critical to their success on the job. Joe commented that the voice output capability of his system

...has helped me on the job making phone calls... I find that having an AAC system on the job restores energy that I would have lost. For example, making phone calls is much easier and conserves my energy because I save my “real voice” for matters in the office [e.g., talking to coworkers].

Brendan, like other participants, also reported that the World Wide Web was a helpful tool for obtaining employment:

A Web page can be a powerful tool to break the ice before an interview in that they will know what to expect to see when they first meet you... In my first interview after I published my Web page I got the job. My vocational rehabilitation counselor asked my new boss why he hired me. Of course he said because of my skills. But secondary, he liked that I had the “balls” to describe my disability on the WWW.

Policies and Funding

The participants identified policies that they felt had provided support in their jobs. They identified government legislation, specifically the Americans with Disabilities Act (ADA),⁹ as an important support for attaining full-time employment. The ADA is federal civil rights legislation in the United States that provides legal protection from discrimination to people with disabilities and ensures equal access to employment and certain other services.

Additionally, the participants reported that they received support from government programs such as vocational rehabilitation; however, their support was not always as substantial or as timely as some participants would have liked. Joe stated, “The only good thing that resulted from my VR experience was that I found freelance writing jobs that paid!”

⁹Additional information is available at www.usdoj.gov/crt/ada/statute.html/.

Finally, Brendan commented on the importance of the government program that provided him with financial assistance for the attendant care services that he required: "...the state gives me SOME money for attendant care."

Family Supports

The participants recognized the important supports that their friends and families provided, including assistance with transportation and personal care. Stated Joe, "As a result of my busy schedule, my family members serve as my personal assistant services. I'm fortunate to have them as my support, but I'm still looking for other people to help me. But I wouldn't change anything if it meant not having a job."

Workplace Supports

The participants also acknowledged the importance of obtaining support from coworkers and employers. Michael noted the importance of identifying a coworker who is able to act as a mentor on the job: "I don't know everything. I had to find somebody I could trust and let the person know I could do the job."

Michael also identified networking with coworkers and supervisors as an important strategy for obtaining employment: "Networking — you have to know a lot of people [to get a job]." John noted the advantages of creating a network of friends within the workplace environment to keep him updated on new job openings and opportunities: "If I had to say anything, it helps to have friends in different departments."

Recommendations for Improving Employment Outcomes

The participants in this study not only described the barriers that they had encountered and the supports that they had used to ensure successful employment but also outlined recommendations to several groups to improve employment outcomes for other individuals with cerebral palsy who rely on AAC. Specifically, their recommendations were directed toward other AAC users, educators, technology developers, employers, and policy makers. A summary of the recommendations made to each audience is provided in Table 4.

Recommendations to Other AAC Users

The focus group offered recommendations to other individuals with cerebral palsy who use AAC and are seeking employment. These focused on preparing for, obtaining, and maintaining employment. Bruce addressed the area of job preparation and advised others to build on their academic strengths to prepare for employment: "One of the keys to academic success is to study things that you do well at. This lesson

is particularly important to people with disabilities as their options are limited."

Many of the participants emphasized the importance of persistence and determination in obtaining employment. Said Michael, "...be persistent. You cannot give up! If you know you are trained and educated for the job, you have to fight for it!" Sean also recognized the importance of persistence: "Finding a job is hard for anyone, but especially harder for a disabled person. That's why it's important to be persistent in finding a job and to have a lot of patience."

The participants felt that it was important to make use of all available resources when looking for employment. Brendan recommended using the World Wide Web in the search for employment: "People need to use the Web at its highest capabilities. First of all, they should make a Web page to explain their disability, the adaptive equipment they use, and, of course, have their resume on it. Companies DO search the Web for resumes."

Participants also discussed support services that were important to their search for a job. As Brendan stated, "People with disabilities should definitely use their state's vocational rehabilitation services." Michael felt that legal support was critical to securing employment: "You must have a good lawyer. For my job, it took me about 2 years to get my job. Do not give up!" The participants recommended that individuals who are employed should also make use of the resources that their coworkers have to offer and identify key individuals in the workplace that could answer workplace questions. Many of the individuals advised AAC users to ask questions to learn more about their jobs.

Recommendations to Educators

The participants also offered suggestions to educators to improve employment outcomes for people with cerebral palsy who use AAC. They felt that educators should be more aware of their students' abilities and should assist them to reach their full potential by providing them with the skills necessary to become productive adults. Ken's recommendation to educators encompassed the need for preparation and expectations: "Stop the damn underestimation of students having disabilities and prepare them with productive skills to be adult citizens."

The participants also suggested that students would be better prepared to enter the workforce if they knew about job options that might be available to them in the future and if they received adequate training in job search skills. Joe wrote, "What schools—grammar and high schools—should offer are job interviewing skills to...students, even in grammar school!"

Recommendations to Technology Developers

The participants developed a number of recommendations for technology developers aimed at facil-

TABLE 4: Summary of Recommendations to Facilitate Successful Employment of Individuals with Cerebral Palsy Who Use AAC

<i>Audience</i>	<i>Recommended Actions</i>
Individuals who use AAC	<p>Study areas in which you do well</p> <p>Be persistent</p> <p>Make use of all available resources for attaining and maintaining a job (e.g., the Internet, vocational rehabilitation services, legal action, and coworkers' expertise)</p>
Educators	<p>Know abilities of students with disabilities</p> <p>Provide appropriate and challenging instructional activities</p> <p>Prepare students with the necessary skills to be productive adults</p> <p>Inform students about job options</p> <p>Provide opportunities to practice interviewing skills</p>
Technology developers	<p>Develop a real-time translation program that understands the speech of individuals with speech impairments</p> <p>Develop hands-free access to the on/off option on AAC devices</p> <p>Develop a wider range of easily portable AAC systems</p> <p>Develop a way for AAC users to have private telephone calls</p> <p>Develop an AAC system that can vocalize thoughts</p> <p>Improve the integration of AAC systems and computer technologies through better collaboration between AAC and computer manufacturers</p> <p>Include AAC users on the device development team and pay them well</p>
Employers	<p>Allow individuals with disabilities the opportunity to prove their abilities</p>
Policy makers	<p>Provide public education to dispel myths about people with disabilities</p> <p>Enforce disability civil rights legislation (e.g., ADA) more rigorously</p> <p>Make income that is spent on attendant care and assistive technologies nontaxable</p> <p>Institute a systematic change of the vocational rehabilitation system (i.e., more personalized services, greater consumer control)</p> <p>Mandate the establishment of Speech-to-Speech outreach services and teach individuals how to use the system</p>

ADA = Americans with Disabilities Act.

itating successful employment (see Table 4). Many of these recommendations centered on faster input methods that would facilitate spontaneity, including the development of speech recognition systems for individuals with dysarthric speech. Participants were also interested in devices that could interface more effectively and reliably with other technologies (e.g., the ability to conduct private telephone conversations using an AAC device). For some individuals, the development of lighter, more portable AAC systems was identified as a research priority.

Some of the participants also recommended that assistive technology developers should create a closer working relationship with computer manufacturers so that, as one participant wrote, "the communication device can become one with ANY computer

within seconds." Additionally, some of the participants recommended that assistive technology manufacturers work to be more consumer oriented. Brendan suggested that consumers should be more involved at the development level: "Also, these 'device developers' SHOULD include device users. I'm not saying device users should be called upon just as consultants; they should have high-paying jobs alongside of nondisabled developers."

Recommendations to Employers

Participants also targeted employers in their recommendations to improve employment outcomes. Specifically, they urged employers to eliminate negative attitudes and give individuals with disabilities the

opportunity to prove their skills. Brendan explained, "The only solution to this [negative attitudes of employers] is to just give us a chance. We wouldn't apply for a job that we didn't think we could do."

Recommendations to Policy Makers

The participants had several suggestions for government policy makers. These were the need to (a) promote public education regarding disabilities, (b) provide more stringent enforcement of the ADA, (c) institute systematic changes in the vocational rehabilitation system, (d) eliminate taxes on income that is spent on attendant care and assistive technologies, (e) provide support for the provision of high-quality attendant care services, and (f) support the establishment of Speech-to-Speech outreach services.

Joe advocated for a disability awareness campaign to assist in breaking down attitude barriers that the participants experienced:

I don't know if the government can do anything about [people's negative attitudes], other than educating the public and correcting the myths about what society places on pwds [persons with disabilities]...If the...government could do a massive disability awareness campaign to curtail the fears and myths of pwds, that would help.

Matt felt that the government could improve employment outcomes for individuals with disabilities by more stringent enforcement of the ADA: "I think ADA is great, but I think they should make it a felony if somebody breaks ADA." Ken also addressed government reform; specifically, he advocated for reform in tax legislation: "Allow the part of our income we pay for attendant care and assistive technologies to be nontaxable income. To have to pay taxes on it just adds insult to injury!"

Joe commented on the changes that he felt should be made to the VR system: "The government should intervene and eliminate the meaningless bureaucracy (oxymoron) and let the VR field be more consumer controlled." Michael added, "I think they should be more personalized to people." In addition, Bruce campaigned for a federal mandate for Speech-to-Speech services: "You ask what the government should do. My focus again has to be on STS [Speech-to-Speech]. The government must mandate the states to establish EFFECTIVE STS outreach services."

DISCUSSION

The eight participants in this study held a wide variety of jobs and had taken different paths to obtaining employment; however, each of them also clearly described the important role that employment played in their lives and the significant barriers that they confronted in achieving successful employment. They also delineated the strategies and supports that

helped them to overcome these barriers, including preparing for, obtaining, and maintaining employment. These topics are described in the sections that follow.

Types of Jobs

Individuals with severe disabilities have typically experienced serious difficulty in obtaining employment (Blackorby & Wagner, 1996). Those who are employed usually work at low-paying jobs with limited options (Mank, Cioffi, & Yovanoff, 1998). In contrast, the participants in this study provide evidence of the positive outcomes that are possible when key employment supports are in place. All of these individuals held jobs that would be considered skilled; that is, they worked in office or classroom environments, made extensive use of computers (e.g., database management, software development), and described themselves as enjoying a middle-class level of income and lifestyle.

It is of interest to note that the participants held jobs in both the public and the private sectors. Six participants (Gary, Joe, John, Ken, Bruce, and Michael) worked for either government or disability-related organizations, which have traditionally served as important employment opportunities for those who face discrimination in the private sector (Rifkin, 1995), whereas two participants (Brendan and Sean) worked for private companies, both of which were high-technology firms. As increasing numbers of individuals seek employment, it will be important that they be able to consider a broad range of employment options. The findings of this study provide evidence that individuals with severe disabilities can be successful in a range of employment situations when appropriate supports are provided.

Preparing for Employment

Light et al. (1996) identified quality education as an essential factor in preparing for successful employment. All of the individuals in this study were well educated, with education levels ranging from some college credits to completion of a doctoral degree. The participants considered their educational preparation to be critical to their successful employment opportunities. These findings are in keeping with the results of research on successful employment of individuals both with and without disabilities. Strong educational backgrounds are becoming increasingly more important for all individuals who wish to secure employment (Blackorby & Wagner, 1996). Students with disabilities who are educated in regular education classrooms and who receive appropriate support services have better employment outcomes than those students who are taught in segregated classrooms (Blackorby & Wagner, 1996; Hasazi, Gordon, & Roe, 1985; O'Grady, Nishimura, Kohn, & Bruvold, 1985).

Although participants recognized the value of a high-quality education, many were critical of the special education services that they had received. It is of interest to note that all of the individuals in this study had experience in both the general and the special education system. As such, it is difficult to identify a clear cause and effect relationship between their educational activities and their employment successes. However, the participants clearly stated that they made their greatest academic progress when expectations were high and that too often the expectations of special education teachers were low and the educational activities provided were inappropriate.

The implications for the educational system are clear. Educators should work to include individuals with cerebral palsy who use AAC in regular classrooms and provide them with appropriate educational experiences to prepare them for adult life (Blackorby & Wagner, 1996; Hasazi et al., 1985; O'Grady et al., 1985). Such preparation for adult life can begin with supporting children to develop communication and interpersonal skills and learn the time management skills necessary for completing important activities (Carlson, 1994). As students grow older, educators and vocational rehabilitation counselors should work together to identify early volunteer or work experiences designed to help them acquire both employment skills (Hasazi et al., 1985) and the positive work ethic that the participants identified as so important to maintaining successful employment. Hasazi et al. (1985) found that individuals who gained employment experiences through summer jobs, part-time jobs, or vocational programs in high school were more likely to be employed than those who did not have these experiences. All but one of the individuals in this study had held at least one job prior to obtaining their full-time jobs.

Early vocational experiences also provide individuals with opportunities to find out what types of work they enjoy. Both the type and amount of work (i.e., number of hours per week) are important variables to consider. Full-time employment has associated costs (e.g., physical demands of full-time work, reduced time for nonwork activities) that should be considered carefully. Light et al. (1996) emphasized the importance of finding a good match between an individual and his or her employment position. These vocational experiences may also assist in establishing a social network between the individual and members of the community who are employed, which can be helpful during the search for employment (Light et al., 1996).

Obtaining Employment

The participants in this study identified social networks within a community as critical resources when seeking employment. These findings are similar to those identified in studies that focused on individuals with a variety of disabilities (Hasazi et al., 1985; Heal, Gonzalez, Rusch, Copher, & DeSefano, 1990; Heal &

Rusch, 1995; McAfee & McNaughton, 1997) and those who use AAC (Light et al., 1996). Community networks, particularly family and friends, play a critical role in opening the door to potential employment opportunities.

In addition to social networks, the study participants identified government policies and programs as important supports to attaining employment. Vocational rehabilitation programs funded by the government were considered by some of the participants to have been helpful in identifying and securing potential employment positions; however, as in past research (Weller, 1991), VR services were also criticized for their lack of timeliness and intensity. For those individuals who relied on VR services for funding support for assistive technology, slow services often meant extensive delays in obtaining employment.

The ADA was also considered to be an important policy support since this legislation mandates that individuals with disabilities cannot be discriminated against because of their disability and must be considered for jobs for which they are otherwise qualified. Subsequently, legal services were considered important when potential employers were reluctant to hire individuals with disabilities who were otherwise qualified for the position.

The participants also identified technology, particularly access to the World Wide Web, as a strategy for obtaining employment. Some of the participants in this study found that posting their resume to the Web positively influenced the perceptions of potential employers by providing more information about them, their disabilities, and their means of communication prior to a first meeting. Many individuals who use AAC have spoken in blunt terms about the societal prejudice they have faced in seeking employment. As Williams (2000) wrote,

Why are so many people consigned to lead lives of needless dependence and silence? Not because we lack the funds, nor because we lack the federal policy mandates needed to gain access to these funds. Rather, many people lead lives of silence because many others still find it difficult to believe that people with speech disabilities like my own have anything to say or contributions to make. (p. 250).

Past research provides evidence that the provision of accurate information about individuals with disabilities has a positive impact on the attitudes of individuals without disabilities (Barrett & Pullo, 1993; Gorenflo & Gorenflo, 1991). Providing employers, coworkers, and society in general with accurate information about individuals with disabilities appears to be one important step in the right direction.

Maintaining Employment

The participants in the present study identified a number of personal characteristics as critical to main-

taining successful employment: a strong commitment to employment, hard work, determination, persistence, and good time management skills. The respondents to Light et al.'s 1996 survey also indicated that a strong work ethic was the most important factor in maintaining successful employment. These findings were similar to those of Heal and Rusch (1995), who identified quality work, positive attitudes, social skills, and the absence of asocial behaviors as factors that had a positive impact on employment outcomes of individuals with disabilities.

A second essential factor for maintaining employment that was identified by the participants was AAC technology. Access to an efficient, effective, and appropriate means of communication for both work and social purposes is vitally important in the workplace (Light et al., 1996). Although all of the participants used a variety of means (including speech approximations and gestures) to communicate, access to AAC technology for the clear communication of detailed information was critical to successful employment. For example, participants said that the ability to communicate their questions and ideas with their fellow employees allowed them to benefit from mentoring by coworkers. Because of AAC technology, these individuals were able to seek advice and information from an established coworker and to more successfully integrate into the work environment.

Six of the participants in this study received personal care services while at the workplace. The provision of personal care is an important support to obtaining and maintaining employment (Light et al., 1996). Many of the participants, however, expressed frustration with the quality of service provided by hired attendants. Because of the difficulty experienced in obtaining appropriate services, family members were often required to assist with transportation and personal care.

Family involvement is of major importance in the employment outcomes of individuals with disabilities. Heal and Rusch (1995) found that students with moderate to high family involvement were more successful in achieving employment than were students with little or no family involvement. As in previous research with other individuals with disabilities (Hasazi et al., 1985; Heal et al., 1990; Heal & Rusch, 1995), families were an essential component of the support networks that assisted individuals to secure employment.

Summary

The participants in this study described appropriate educational and vocational experiences as key to preparing for successful employment. Community networks, government policies, and computer technology were described as important supports for obtaining employment, whereas important supports for

maintaining employment included personal characteristics, technology, supportive coworkers, personal care assistance, and family supports.

Limitations

This study contributes to the existing literature on employment by identifying supports and barriers to successful full-time employment for individuals with cerebral palsy who use AAC and by providing recommendations for those involved in the employment process; however, there were several limitations. To begin with, owing to the nature of the Internet-based focus group discussions, participants were required to be literate and to have access to computers. Although literacy may be important to successful employment outcomes, there are also individuals with cerebral palsy who use AAC and are employed but who *do not* have functional literacy skills (Light et al., 1996); their experiences were not included in the results of this study. In addition, the results do not convey the experiences of individuals without computer access.

In addition to requiring computer and literacy skills, this study also required the participants to be employed full time; as such, it is not representative of the experiences of individuals who are employed on a less-than-full-time basis. It is also important to note that the information provided in this article is based on participants' reports of past events rather than on third-party observations. As in any retrospective activity, the recollections of individuals may be influenced by their perspectives and memories of particular events (Koppenhaver, Evans, & Yoder, 1991). Furthermore, as in any focus group activity, only the perspectives of a particular group of participants at a specific point in time are presented here; this report does not include the experiences of their employers, coworkers, and family members, nor of the educators and VR professionals who were involved with them. Finally, the study does not provide information about how participants' beliefs and perspectives may change over an extended period of time.

Future Directions

The results of this study provide clear evidence that successful full-time employment is an attainable goal for individuals who use AAC; however, it is also clear that only a small fraction of the many individuals who are seeking employment have attained this goal. Given the critical importance of employment and the limited amount of research related to successful employment outcomes for individuals with cerebral palsy who use AAC, further research is needed in several areas. First, it is important to determine the factors that contribute to the successful employment of individuals who have cerebral palsy and use AAC but who work part time or are self-employed, have poor literacy skills, or do not have computer access.

At present, research is under way to develop a better understanding of the experiences of AAC users who work part time or are self-employed (McNaughton, Light, Birmingham, Parsons, & Groszyk, 2000).

Investigation into the perceptions of employers, coworkers, family members, educators, and vocational rehabilitation counselors is also critical to determining the barriers that AAC users encounter in employment experiences and supports that will contribute to positive employment outcomes. At present, researchers are working to develop a better understanding of the views of family members, coworkers and employers, and rehabilitation professionals (McNaughton, Light, & Gulla, 2001).

Future research should also investigate attempts to replicate models of successful employment discussed in this study with other individuals who require AAC and who are seeking full-time employment. To this end, the Employment Project¹⁰ at The Pennsylvania State University is developing a comprehensive Web-based resource for individuals interested in employment issues for AAC users, whereas Project ACETS¹¹ at Temple University provides an innovative approach to developing the employment skills of individuals who use AAC.

Successful employment outcomes for individuals who use AAC are important to the individuals themselves, their employers, and society as a whole. The results of this study indicate that success is built on both internal supports such as personal characteristics and external supports such as educational experiences. Equally important, however, is the willingness of society as a whole and of employers in particular to give individuals with disabilities an opportunity to demonstrate their skills and get their "wheels in the door."

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¹⁰The Employment Project at The Pennsylvania State University is funded in part by the AAC-RERC and the National Institute on Disability and Rehabilitation Research. In Phase 1, we have gathered information on the employment experience of individuals with amyotrophic lateral sclerosis, cerebral palsy, and autism, as well as the perspectives of employers of AAC users, their family members, and interested professionals. Additional information is available at <<http://mcn.ed.psu.edu/emp/home.html>>.

¹¹ACETS is the Augmentative Communication Employment Training and Support program located at the Institute on Disabilities at Temple University, Philadelphia, Pennsylvania, USA. The goal of this 5-year project is to develop and implement a curriculum to train at least 25 augmented communicators to significantly increase their vocabulary, knowledge, and skills related to employment, especially in fields that rely on the Internet. Additional information is available at <<http://www.aac-lerc.com/pages/ProjectSite/R6.htm>>.

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Address reprint requests to: David McNaughton, Department of Educational and School Psychology and Special Education, 227 CEDAR Building, The Pennsylvania State University, University Park, PA 16802 USA; E-mail: dbm2@psu.edu.

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APPENDIX A: Topics and Questions Posted to the Discussion by the Moderator

Topic	Question
Welcome	Welcome! Thank you for joining our discussion! Before proceeding to our first topic, could you please post a message saying "Hello" and, for the fun of it, please tell us something about local news that is important to you. It could be something about a recent holiday or local events, or even just the weather. This will give you a chance to practice using this Discussion Site (and help us imagine where you are when you post to this Site!).
Benefits	Perhaps we can start our discussion by talking about the benefits of full-time employment. Clearly, maintaining work activities involves considerable effort and persistence, and not everyone makes the same decision. If someone were to ask why you have chosen to seek out and maintain full-time work, what would you say?
Finding a job	While there are many AAC users who would like to have a full-time job, there are very few AAC users who have a full-time job. What do you think are some of the reasons that you were successful in finding a job? I would be very interested in learning more about the job search strategies that worked for you and what you would recommend to other AAC users.
The challenges of full-time employment	Sometimes getting the job is just a first step. When I think about the jobs I have had (and sometimes lost!) I sometimes did not have any idea about what the job was all about until I had been there a few weeks. At that point, I needed to adapt (or find a new job!). What have been some of the challenges of full-time employment once you actually have the job?
Communication and AAC technology	A number of you have talked about the importance of AAC technology, and a number of you have also mentioned that you are sometimes frustrated with this technology (e.g., problems with the telephone, problems connecting up to computers). One of the groups that is interested in what you have to say is rehabilitation engineers who are involved in designing the "next generation of AAC" devices. What have been your experiences with AAC technology in working with other people? What has been positive about the AAC technology that you use? What has been a problem with the AAC technology that you use?

Appendix A continues on next page

APPENDIX A: Topics and Questions Posted to the Discussion by the Moderator (*Continued*)

<i>Topic</i>	<i>Question</i>
What government should do	A number of you have mentioned problems you have faced in seeking employment, including the attitude of some employers, difficulties with transportation, ineffective services from OVR (Office of Vocational Rehabilitation), and other problems. I would like to talk about a variety of ways that we could start to work on these problems, but, because it is an election year, let's start with the government. What do you think the government's role should be in addressing these problems? Are these "people" problems that government cannot change, or is there legislation that could improve the job prospects of people with disabilities? If you could run Washington for a day (or a year), what would you do?
Finding a balance: important supports	Brendan has put into words what many of you may be feeling — that full-time employment and the demands that go with it can "eat up" all of your time. Has having a full-time job made it difficult for you to have the time you need for other activities in your life? What supports (e.g., help from family members, friends, coworkers, etc.) have been important in helping you to cope with the demands of your job?
Message to technology developers	As you have discussed augmentative communication technologies, you have referred to features that you like in AAC technologies (e.g., devices should be strong, easy to fix) and features that you do not like (e.g., problems connecting to workplace technology). What would be the features of an ideal AAC device? Another part of this research project is a group of engineers who want to hear from technology users what the next generation of technology should include. We would all be sincerely interested in your ideas on this topic. Again, please don't be shy about coming up with "far-fetched" ideas; 5 years ago, no one knew the WWW would look like this. Many of you were at the Pittsburgh Employment conference last summer and you heard the ideas of AAC users there: daily calendars, cell phones, pagers, WWW link-ups, and (I think this was a joke) a home entertainment system. What is on your wish list?
Barriers to getting the job you want	While all of you have jobs now, what are some of the things that have made it hard for you to get a job in the past or to get the job you really want now? Are there government programs that have made it hard for you to get a job? Are people's attitudes sometimes a barrier? Transportation? Computer breakdowns? I would be interested in hearing about some of the reasons that it is sometimes hard to get a job.
Message to schools	One of the goals of this project is to provide AAC users, their parents, and teachers with information on how AAC users can prepare for employment while they are still in school. Looking back, what were some of the things that happened in school that helped you get ready for the "world of work"? Was there anything or anyone in your school years that was particularly helpful? Also, was there something that you wanted at school but did not get? Looking back now, was there a way that school could have better prepared you to find and keep a job?

APPENDIX B

Operational Definitions of Coding Themes

1. *Description of Employment Activities.* Comment that provides information about employment activities but does not include benefits/reasons for employment, negative impacts, barriers, or supports related to employment (e.g., "my duties included").
2. *Benefits of Employment and Reasons for Being Employed.* Positive outcomes resulting from engagement in employment activities, including social, financial, familial, personal, psychological, or physical gains. Motivational factors or reasons for participating in employment activities, including negative effects of unemployment.
3. *Negative Impact of Employment.* Negative experiences (including social, financial, familial, personal, psychological, or physical) resulting from engagement in employment.
4. *Barriers to Employment.* Any person, organization, situation, action, or device that impedes an individual's ability to obtain and maintain a job. Barriers can include policies, practices, attitudes, knowledge, skill, education, preparation, information dissemination, access, or physical/medical conditions.
5. *Supports to Employment.* Any person, organization, situation, action, or device (including educational) that enables or assists an individual to obtain and maintain a job.
6. *Recommendations.* Suggestions regarding ways of overcoming barriers to employment based on the participants' personal experiences and ideas. Includes recommendations to persons with cerebral palsy and their families, employers, coworkers, policy makers, service providers, rehabilitation professionals, and technology developers.
7. *Cerebral Palsy Issues.* Comment or question that is related to cerebral palsy but not directly related to employment (e.g., "I have had cerebral palsy from birth").
8. *Unrelated Statement.* Comment or question that is unrelated to cerebral palsy and not directly related to employment (e.g., "Go Nittany Lions!").