

## Preparing to Leave School: Involvement of Students With Intellectual Disabilities in Productive Activities

### Abstract

*This paper describes results from the first year of a longitudinal study investigating support needs of students with intellectual disabilities preparing to leave high school. Forty-eight parents of students were interviewed. Results indicate that the majority of students were not involved in volunteer activity or employment. Adaptive functioning did not differ according to involvement in employment or volunteer activities; however, students who were supported in employment or volunteer activities were reported to exhibit less maladaptive behaviour.*

As students with and without disabilities prepare to leave high school, they are faced with decisions about productive activities. The two most common activities for students without disabilities are post-secondary education and employment. In the province of Ontario, school is mandatory until 16 years of age. While programs are structured for mainstream students until they are 17-18 years old, students with intellectual disabilities (ID) may continue in structured school to community programs until the age of 21.

Over the past several decades, an increasing number of typically developing students have entered the workforce while still attending school. A survey of 1001 grade 9 students in the US found that 52% were involved in paid employment, working at least one day a week outside of their home (Mortimer, Finch, Shanahan, & Ryu, 1992). A Canadian survey of youth in transition found that 61.5% of students in their final year of high school worked for pay with 37.6% working 1-19 hours per week (Bowlby & McMullen, 2002). A third study by Australian researchers found that 77% of students held employment positions outside of school by the final year of high school (Creed, Muller, & Patton, 2003). Work experience during

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high school provides numerous benefits to students. Jobs that are perceived to teach skills such as the ability to follow directions and take responsibility can contribute to an increased sense of internal control and heightened self-esteem (Mortimer et al., 1992).

Despite the high frequency of employment among typically developing students and the reported benefits of work while still in high school, students with ID often face many challenges in obtaining paid work while in school as well as after graduation (Ochocka, Roth, & Lord, 1994). Employment of some form is a goal for many high school students with ID (Cooney, 2002; Katsiyannis, Zhang, Woodruff, & Dixon, 2005). Reiter and Palnizky (1996), however, found that one third of graduates from special schools were not working 6 months after graduation and were forced to remain at home without any form of support or day program. Lack of transportation and unfamiliarity with various occupations have been found to contribute to unemployment in students with ID (Cinamon & Gifsch, 2004; West, Hock, Wittig, & Dowdy, 1998).

As employment opportunities are often limited for individuals with ID, participation in volunteer activities may provide an alternative option for productive activity in the community. Several studies have demonstrated beneficial effects of participation in volunteer activities including improved self esteem and self concept, a sense of accomplishment and belonging (Choma & Ochocka, 2005), increased social networks and community integration, a heightened sense of purpose, and the development of new skills related to the specific volunteer activity (Li, Liu, Lok, & Lee, 2006; Miller, Schleien, Rider, Hall, Roche, & Worsley, 2002). Despite the potential benefits associated with volunteer work, individuals with ID often do not have access to such activities (Miller et al., 2002).

Considering the challenges faced by individuals with ID regarding employment and volunteer activity, it is important to gain an understanding of factors that may contribute to these difficulties. Adaptive functioning and maladaptive behaviour have been shown to play an important role in educational placements (de Bildt et al., 2005); however, limited information is available regarding the relationship between adaptive functioning, maladaptive behaviour and participation in employment and volunteer activity.

The purpose of the present study was to address three questions related to the employment and volunteer activities of a sample of students with ID in South Eastern Ontario prior to leaving high school: 1) Are students integrated in employment and volunteer settings? 2) Does higher adaptive functioning contribute to involvement in these activities? 3) Do maladaptive behaviours contribute to a lack of involvement in these activities?

## Method

### Research Participants

The data reported in this paper were provided by 48 parents or other caregivers of high school students with ID in South Eastern Ontario. The respondents (42 female; 6 male) had an average age of 47.09 years ( $SD=9.14$ ). See Table 1 for further information. The students (14 female; 34 male) were between the ages of 15 and 21 years ( $M=18.47$ ,  $SD=1.64$ ). Only one student was fully integrated in school. The cause of intellectual disability was unknown in more than half of the students (see Table 2).

### Recruitment and Data Collection

Participants for this study were recruited through the 5 English-speaking school boards and the partner agencies involved

in the South Eastern Ontario Community-University Research Alliance in Intellectual Disabilities (SEO CURA in ID). Secondary schools were asked to distribute an invitation package to each student meeting the age criteria and ID designation. The invitation package was distributed to all individuals with a copy to parents asking

those interested to return a completed consent form including their contact information to the researchers. Once the consents were received, parents or other identified caregivers were interviewed by telephone. Face-to-face interviews with the students with ID also were arranged at this time; however these data are not reported in this paper.

Table 1. Characteristics of Parent Respondents (n=48; unless otherwise specified)

Marital Status	n (%)
Single	5 (10.4)
Married/Common-law	37 (77.1)
Separated/Divorced or Widowed	6 (12.5)
<i>Relationship to Student</i>	
Parent	43 (89.6)
Other (including paid caregivers and grandparents)	5 (10.4)
<i>Level of Education (n=44)</i>	
Grade 11 or less	5 (11.4)
High School Diploma	16 (36.4)
Community College	13 (29.5)
University Degree including Graduate or Professional Degree	10 (22.7)
<i>Household Income (n=40)</i>	
\$25,000 or less	6 (15.0)
\$25,001 - \$55,000	14 (35.0)
\$55,001 - \$95,000	15 (37.5)
\$95,001 or more	5 (12.5)

Table 2. Characteristics of Students (n=48, unless otherwise specified)

Gender	n (%)
Male	34 (70.8)
Female	14 (29.2)
<i>Cause of Disability</i>	
Autism Spectrum Disorder	10 (20.8)
Down Syndrome	7 (14.6)
Other Chromosomal	6 (12.5)
Unknown	25 (52.1)
<i>School Placement</i>	
Full Segregation	24 (50.0)
Partial Segregation	23 (49.7)
Full Integration	1 (0.3)

**Measures**

*Demographic Questionnaire.* Student information including age, gender, type and degree of disability were gathered from a parent or caregiver. In addition, characteristics about the caregiver, namely age, gender, marital status, education level and employment status, as well as the caregiver’s relationship to the individual were collected.

*Scales of Independent Behavior-Revised Short Form (SIB-R SF; Bruininks, Woodcock, Weatherman & Hill, 1996).* This scale was used to assess the students’ everyday living skills. It assesses adaptive behaviour including motor, social interaction, communication and personal living skills, as well as maladaptive behaviors under three main categories: internalized behaviours, asocial behaviours and externalized behaviours. Reliability co-efficients for the Short Form range from .74 to .76 across the age span, with reliability of .80 for the age group of study (16-21 years); test retest reliability is .86; construct validity ranges from .67 to .96 being .95 overall. For purposes of this paper, adaptive functioning was measured as the difference between chronological age and the SIB-R age equivalent score. This measure and the SIB-R derived maladaptive behaviour score will be reported.

*AIMS Interview (Assimilation, Integration, Marginalization, Segregation Scale; Minnes, Buell, Feldman, McColl, & McCreary, 2002).* The AIMS Interview measures levels of acculturation for adults with intellectual disabilities in

various domains including: medical/dental services, social and recreational activities, education, employment and volunteer activities, accommodation (i.e., living arrangements) and spiritual/religious activities. For purposes of this study only data from the Employment and Volunteer Activity domains are presented. The AIMS, based on an acculturation framework adapted for use in the field of intellectual/developmental disabilities (Buell, 2003; Buell & Minnes, 1994), is designed to measure integration from a service delivery perspective with an emphasis upon environmental supports. An individual is determined to be integrated, assimilated, segregated or marginalized depending on the degree to which his or her disability-related needs are identified and supported in a way that facilitates community involvement. In order to be placed in the Integrated category for the Employment and Volunteer Activity domains, the individual's disability-related needs are identified and supported in a setting where less than 4 individuals have a disability. In the Segregated category, the individual's disability-related needs are identified and supported but there are 4 or more individuals with disabilities in the setting. In order to be Assimilated, disability-related needs are not identified or supported but the individual is in regular employment or volunteer setting. In the Marginalized category, needs are not identified or supported in the domain and the individual is not involved in the activity. Research to date indicates that the AIMS Interview has sound psychometric properties including discriminant and concurrent validity (Minnes et al., 2002).

### Data Analysis

Objective 1: Descriptive statistics were calculated including frequencies and percentages of students in each of the AIMS categories (i.e., Integrated, Segregated, Assimilated, Marginalized) for the Employment and Volunteer Activity

domains. Objectives 2 and 3: t-tests were calculated to determine if there were differences in adaptive and maladaptive functioning between students who were involved in productive activity outside of school (i.e., employment or volunteer activity) and students who were not involved in such activities.

### Results

While the 48 students ranged in age from 15 to 21 years, their SIB-R calculated age equivalents ranged from 3 months to 16.5 years ( $M=7.59$  years;  $SD=3.94$ ). Our measure of adaptive functioning was the difference between chronological age and the SIB-R age equivalent thereby giving a measure of developmental delay. The students showed an average delay in adaptive functioning of nearly 11 years (range: 11 months to 19.58 years;  $M=10.87$  years;  $SD=4.32$ ). There was also variability in maladaptive behaviour with 21 students (43.8%) scoring in the 'normal' range ( $\geq 10$ ) on the SIB-R Maladaptive Behaviour Index. The scores on this index ranged from -44 to -2 ( $M=-14.40$ ;  $SD=11.43$ ).

*Objective 1.* Data concerning levels of acculturation for the Employment and Volunteer Activity domains are summarized in Figure 1. Overall, only 15 students (31%) in the sample were supported (i.e., Integrated or Segregated). Three (6%) were involved only in employment, 11 (23%) were involved only in volunteer activity, and one (2%) was involved in both employment and volunteer activity. Informants indicated that 21 students were not participating in employment because of their disability, and as a result, these 21 (44%) were rated as Marginalized in the Employment domain. Employment was rated as Not Applicable, following the AIMS scoring criteria, for 17 (35%) students whose informant indicated that they were not employed due to their involvement in school activities. An additional six (13%) students were not employed but the

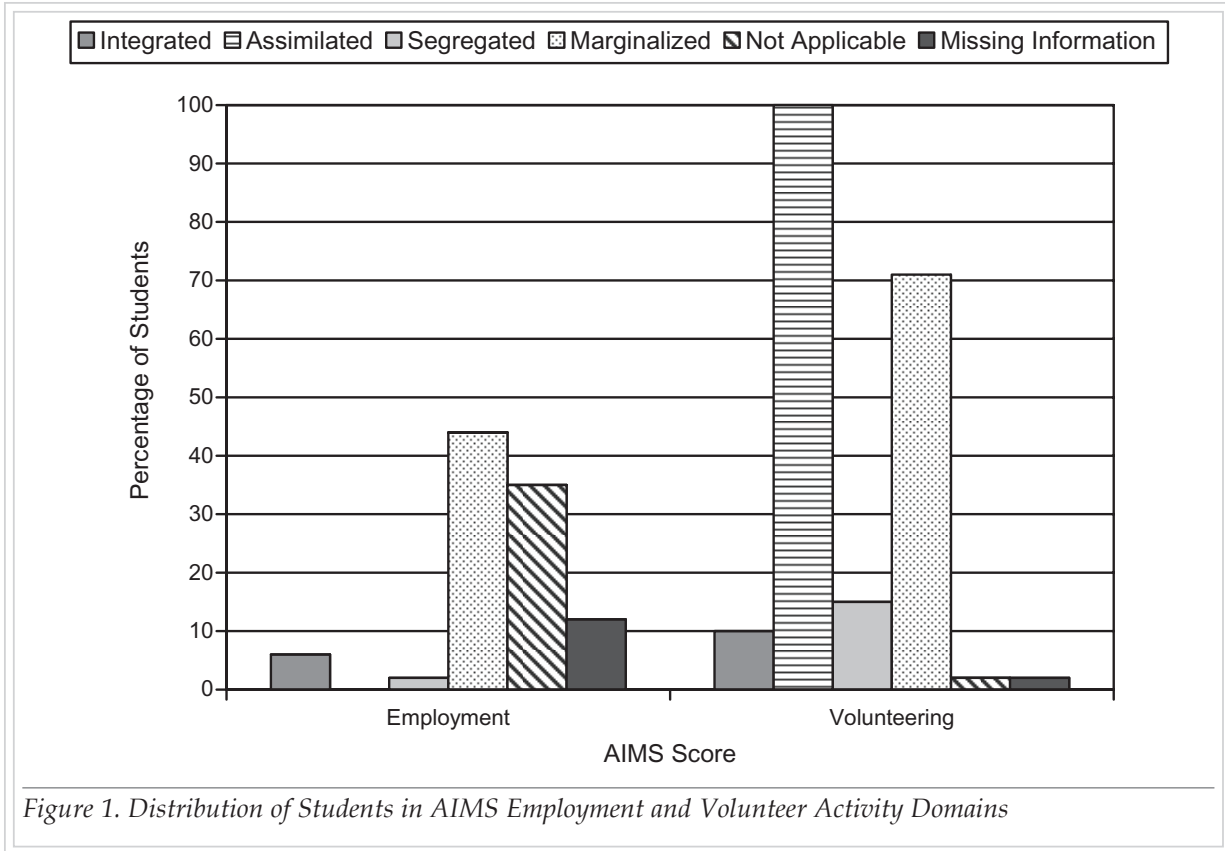


Figure 1. Distribution of Students in AIMS Employment and Volunteer Activity Domains

reason for their unemployment was not given. As a result, these students could not be placed in an AIMS category.

Thirty-six (75%) of the students in this study were not involved in volunteer activities. Overall, 34 (71%) of these students were rated as Marginalized in the Volunteer Activities domain. One student was given a rating of Not Applicable because the student was described as being “too busy with employment.” The reasons for one student not volunteering were not given and therefore the student could not be placed in an AIMS category.

*Objectives 2 & 3.* Comparisons were made between students who were involved in productive activity (i.e., employment and/or volunteer activity;  $n=15$ ) and students who were not involved in productive activity ( $n=33$ ). Chi square analyses indicated that there were no significant gender differences between students involved in productive

activity and those not involved,  $p=.54$ . Additionally, t-tests showed that there were no differences between the two groups in either their mean chronological age or mean age equivalent as determined by scores on the SIB-R (see Table 3, page 24).

Adaptive functioning and maladaptive behaviour were compared between those involved in productive activity and those not involved. As shown in Table 3, the groups were comparable in terms of adaptive functioning but those who were not involved in productive activity had significantly higher maladaptive behaviour scores.

### Discussion

The purpose of the present study was to examine participation in productive activities in a sample of students with ID who are preparing to leave high school in South Eastern Ontario and to investigate the impact of adaptive functioning and

Table 3. *T-tests: Factors Associated With Involvement in Productive Activity*

	Supported in Productive Activity (n=15)		Not Supported in Productive Activity (n=33)		df	t	p
	M	SD	M	SD			
Age (years)	18.66	1.47	18.38	1.72	46	0.53	NS
Age Equivalent (years)	8.58	4.04	7.14	3.87	46	1.18	NS
Adaptive Functioning Score*	10.07	4.55	11.24	4.23	46	0.87	NS
Maladaptive Behaviour Index Score**	-9.27	6.97	-16.73	12.36	44***	2.66	< .05

\*difference between chronological age and SIB-R derived age equivalent in years

\*\*as per SIB-R (possible scores range from -70 to +10)

\*\*\*Levene's correction for degrees of freedom and t-test scores was used due to unequal variances between groups.

maladaptive behaviours on participation in these activities. The data presented are based on reports from parents or other caregivers.

Only a small number of participants (8%) in this study were employed and were rated as Integrated or Segregated (i.e., their needs identified and supported in the employment setting). In contrast, 44% of the students were rated Marginalized for Employment because their disability was given as the reason for their lack of employment. In other words, these students did not have appropriate supports to assist them in obtaining and maintaining employment. During the development of scoring criteria for the AIMS instrument, minimum wage was set as a requirement for integrated employment to distinguish it from educational or volunteer activity. However, wages were not an issue in the scoring for this sample as all of the students who were employed (n = 4) were earning minimum wage. Those rated Marginalized for employment were so categorized because they were unable to find a job or unable to maintain employment (i.e., their disability-related needs were not identified and supported).

Given the challenges of finding paid employment for students with disabilities,

volunteering is an alternative option. Despite the Ontario secondary school curriculum requirement that students complete 40 hours of volunteer service, three quarters (75%) of the students with ID in the present sample were not involved in any type of volunteer activity. These results are consistent with those of Miller et al. (2002), which suggest that finding volunteer opportunities can be difficult for individuals with ID. Furthermore, our findings highlight the need for the development of support services that inform students and families of volunteering opportunities and facilitate provision of appropriate supports to promote involvement of students in such activities.

Although adaptive functioning was not found to differ according to students' involvement in productive activity, the results indicate an association between maladaptive behaviour and student involvement. The latter is consistent with research that has demonstrated an association between a higher frequency of maladaptive behaviours and poorer post-transition outcomes in individuals with ID (Heal & Rusch, 1994). Our findings suggest that students with maladaptive behaviours prior to leaving high school already are marginalized in that their

disability-related needs in relation to productive activities are not identified or supported and they are not involved. Recent research with adults with autism (Garcia-Villamizar & Hughes, 2007) has indicated that employment can have beneficial effects on the functioning level of participants. It is not clear from the results of our study whether students whose needs are identified and supported either in integrated or segregated activities had fewer maladaptive behaviours to begin with or whether their maladaptive behaviours diminished as a result of the structured activity and supports. This is an important area for future research with regard to both employment and volunteer activity.

### **Limitations and Directions for Future Research**

The lack of association between adaptive functioning and involvement in productive activity is surprising. It is possible that this finding is due to the small sample size, the measure of adaptive functioning used (i.e., difference between chronological age and SIB-R age equivalent score) or the way in which we classified involvement in productive activity. With regard to the latter, future research needs to obtain normative data from students without ID to determine what are reasonable expectations regarding students with ID's involvement in paid employment and/or volunteer activity while still attending school. Attention needs to be given not only to normative data but also to the needs of students with ID in transition. More in-depth analysis is also required to elucidate why employment is considered to be not applicable for some students.

While the cross sectional data in this study provide important descriptive information regarding students' productive activities as they prepare to leave high school, longitudinal data, which

are currently being collected will help to answer questions regarding changes in maladaptive behaviour and adaptive functioning over time and will help to address the issue of directionality (i.e., do adaptive and maladaptive behaviour improve as a result of involvement in productive activity).

This study focused only on data obtained through parent interviews. While parent data are useful, knowledge of student perspectives would further enhance our understanding of how well the needs of individuals with ID are being met. Students were rated as Marginalized in both employment and volunteer activity, if they did not participate in these activities. Further research is needed to determine whether students who are rated Marginalized are aware of activity options and whether they actually would like to participate in such activities if given the opportunity.

### **References**

- Bowlby, J. W., & McMullen, K. (2002). *At a crossroads: first results for the 18 to 20 year old cohort of the youth in transition survey*. (Statistics Canada Catalogue No. 81-591-XIE). Retrieved March 15, 2008 from <http://www.hrsdc.gc.ca/en/cs/sp/hrsd/prc/publications/research/2002-000121/yits-encov.pdf>.
- Bruininks, R. H., Woodcock, R. W., Weatherman, R. E., & Hill, B. K. (1996). *Scales of Independent Behavior – Revised (SIB-R)*. Itasca, Illinois: Riverside Publishing.
- Buell, M. K. (2003). Integration as acculturation: Developmental disability, deinstitutionalization and service delivery implications. *International Review of Research in Mental Retardation*, 26, 221-260.
- Buell, M. K., & Minnes, P. M. (1994). An acculturation perspective on deinstitutionalization, normalization and service delivery. *Journal on Developmental Disabilities*, 3, 94-107.

- Choma, B. L., & Ochocka, J. (2005). Supported volunteering: A community approach for people with complex needs. *Journal on Developmental Disabilities, 12*, 1-18.
- Cinamon, R. G., & Gifsch, L. (2004). Conceptions of work among adolescents and young adults with mental retardation. *The Career Development Quarterly, 52*, 212-224.
- Cooney, B. F. (2002). Exploring perspectives on transition of youth with disabilities: Voices of young adults, parents, and professionals. *Mental Retardation, 40*, 425-235.
- Creed, P. A., Muller, J., & Patton, W. (2003). Leaving high school: The influence and consequences for psychological well-being and career-related confidence. *Journal of Adolescence, 26*, 295-311.
- de Bildt, A., Sytema, S., Kraijer, D., Sparrow, S., & Minderaa, R. (2005). Adaptive functioning and behaviour problems in relation to level of education in children and adolescents with intellectual disability. *Journal of Intellectual Disability Research, 49*, 672-681.
- Garcia-Villamizar, D., & Hughes, C. (2007). Supported employment improves cognitive performance in adults with Autism. *Journal of Intellectual Disability Research, 51*, 142-150.
- Heal, L. W., & Rusch, F. R. (1994). Prediction of residential independence of special education high school students. *Research in Developmental Disabilities, 15*, 223-243.
- Katsiyannis, A., Zhang, D., Woodruff, N., & Dixon, A. (2005). Transition supports to students with mental retardation: An examination of data from the National Longitudinal Transition Study 2. *Education and Training in Developmental Disabilities, 40*, 109-116.
- Li, E. P., Liu, Y., Lok, N. C., & Lee, V. W. (2006). Successful experience of people with Down syndrome. *Journal of Intellectual Disabilities, 10*, 143-154.
- Miller, K. D., Schleien, S. J., Rider, C., Hall, C., Roche, M., & Worsley, J. (2002). Inclusive volunteering: Benefits to participants and community. *Therapeutic Recreation Journal, 36*, 247-259.
- Minnes, P., Buell, M. K., Feldman, M. A., McColl, M. A., & McCreary, B. (2002). Community integration as acculturation: Preliminary validation of the AIMS Interview. *Journal of Applied Research in Intellectual Disabilities, 15*, 377-387.
- Mortimer, J. T., Finch, M., Shanahan, M., & Ryu, S. (1992). Work experience, mental health, and behavioral adjustment in adolescence. *Journal of Research on Adolescence, 2*, 25-57.
- Ochocka, J., Roth, D., & Lord, J. (1994). Workplaces that work—Successful employment for people with disabilities. *Journal on Developmental Disabilities, 3*, 29-50.
- Reiter, S., & Palnizky, A. (1996). Transition from school to work of students with developmental disabilities and mental retardation: An Israeli perspective. *International Journal of Rehabilitation Research, 19*, 27-38.
- West, M., Hock, T., Wittig, K., & Dowdy, V. (1998). Getting to work: Training and support for transportation needs. *Journal of Vocational Rehabilitation, 10*, 159-167.

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