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Postsecondary Education for Transition-Age Students with Intellectual and Other Developmental Disabilities: A National Survey

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Abstract: Transition programs based on college campuses for students with intellectual and other developmental disabilities (IDD) ages 18–21 provide an opportunity for age-appropriate inclusion when peers without disabilities graduate from high school at age 18. The purpose of the present study was to examine the general characteristics of postsecondary education (PSE) programs for students with IDD and the extent to which students with IDD are participating in college classes through a national survey. Results suggest that (a) opportunities for students with IDD to participate in PSE programs may be limited to those students who are enrolled in school districts that fund and operate PSE programs and not open to all students, and (b) although many students with IDD are participating in college classes, the types of classes and the manner in which students participate appear to be linked to the level of students' academic abilities and the type of postsecondary education institution at which the program is located. Implications for future research and practice are discussed.

In recent years, interest has grown in providing postsecondary education experiences as part of the transition to adulthood for students with intellectual and other developmental disabilities (IDD). Many students with intellectual disabilities (synonymous with mental retardation, Schalock, Luckasson, & Shogren, 2007) or developmental disabilities (including autism and Asperger's syndrome) have pervasive support needs and tend to stay in school until they age out of eligibility for special education services at age 21 or 22 (Wagner, Newman, Cameto, Garza, & Levine, 2005). These individuals may receive an alternative high school diploma, participate in alternative high-stakes assessments, and have an individualized education plan (IEP) that focuses on functional life skills, community-based instruction, and job training (Grigal, Neubert, & Moon, 2001). These youth are the least likely of all youth with disabilities to enroll in postsecondary education within 2 years of graduating from high school (Wagner et al., 2005), most likely because they typically do not meet college entrance criteria for academic performance. However, in a review of the literature on postsecondary educational practices for individuals with IDD, Neubert, Moon, Grigal, and Redd (2001) found that opportunities for educational, vocational, and recreational activities on college campuses have been provided to individuals with IDD since the 1970s and that these opportunities are now being increasingly extended to students who are still enrolled in high school.

Transition programs housed on college campuses and in other community locations (e.g., offices, storefronts, and businesses) emerged in the 1970s as alternatives to providing instruction on transition goals for students with IDD in high school settings (Neubert et al., 2001). These programs were considered to provide a more age-appropriate context for functional skill instruction for students with IDD ages 18–21 who were still eligible for special education services, but who exceeded the typical age of high school students. This approach recognized the need to make a distinction between the *high school* ex-

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periences that should be provided to students with IDD up to age 18 and *postsecondary education* experiences that should be provided to students ages 18–21 (Fisher & Sax, 1999). The focus of instruction in these programs was on vocational training, functional skills development, and work adjustment skills. Although some programs were housed on college campuses, instruction was largely segregated and offered few opportunities for interaction with same-age peers (Neubert et al.).

Beginning in the 1990s, increased emphasis was placed by the IDEA of 1990 and the IDEA Amendments of 1997 on postsecondary education for all students, including students with IDD. This emphasis, along with the logical expectations of families and teachers that inclusion with peers without disabilities would continue in postsecondary educational settings, led to a greater focus on creating inclusive postsecondary education options for students with IDD (Neubert et al., 2001). The Division on Mental Retardation and Developmental Disabilities of the Council for Exceptional Children advocated for the provision of services for students with IDD ages 18–21 in an age-appropriate setting such as a college campus (Smith & Puccini, 1995). The movement toward providing special education services to students with IDD ages 18–21 through postsecondary education (PSE) programs has grown to include opportunities for students with IDD to participate in college classes and activities with peers without disabilities.

Professionals in the field have categorized PSE programs for students with IDD as separate, mixed, or individualized program models (see Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004; Neubert & Moon, 2006; and Stodden & Whelley, 2004). Separate model programs, also referred to as substantially separate or segregated programs, are based on college campuses but offer no opportunities for inclusive activities with peers without disabilities. The focus of the curriculum in these programs is on life skills instruction, community-based instruction, and vocational training. Mixed model programs, sometimes called hybrid programs, offer opportunities for students with IDD to participate in inclusive activities including college classes with college students without disabilities and also involve some life skills or vocational instruction in a separate location or classroom on the college campus. Individualized model programs, or inclusive or individualized services, represent the highest level of inclusion for students with IDD as each student's entire day is planned around his or her postschool goals and no instruction in self-contained classrooms occurs. In this model, students may be participating or matriculated into a course of study relating to their employment goals. Regardless of model, PSE programs can be located on the campuses of four-year colleges or universities or two-year or community colleges and have been referred to as transition programs on college campuses, dual enrollment programs, or college campus-based inclusion programs. For students who are receiving special education services through their local school districts, PSE programs may provide instruction and experiences for transition goals in the areas of employment, postsecondary education, and independent living.

As PSE programs for students with IDD who are still enrolled in high school are a relatively new concept, published reports have largely consisted of program descriptions, although one study examined the perspectives of multiple stakeholders on the inclusion of a transition-age student with IDD in a university course (Casale-Giannola & Kamens, 2006) and one study attempted to document the effectiveness of PSE programs for improving the postschool outcomes of youth with IDD through quantitative analysis (Zafft, Hart, & Zimbrich, 2004). To date, only three studies have conducted surveys across PSE programs with the purpose of documenting the characteristics of programs and the activities in which students are involved. Grigal et al. (2001) interviewed teachers in 13 PSE programs for students with IDD in Maryland. This study provided an overview of student characteristics as well as program locations, staffing, funding, referral and admission practices, and program components in programs in this state. Building on this initial study, Neubert, Moon, and Grigal (2004) surveyed 11 of these same PSE programs in Maryland to identify the types of activities in which students participate. In this survey, participation in employment training was found to be occurring for almost all students in these programs, but op-

portunities for participation in college classes were limited. Approximately one third of students were reported to have enrolled in a college class but only 2% of all students in programs in the sample had taken a college class for credit. Other students had taken noncredit classes or audited college classes. The majority of classes that students with IDD had participated in were health and fitness classes, although some students had also participated in computing or remedial reading and math classes. In another study, Hart et al. (2004) provided a national perspective on the characteristics of programs based on college campuses through a survey of 25 programs and a detailed description of six programs. Characteristics including length of time in operation and program enrollment were described for each type of model (individualized, mixed, separate), and other characteristics including types of disability served, use of school district funds, and barriers to postsecondary education were described across the sample. The findings of this survey suggested that students with a wide range of disabilities may be served in PSE programs and that differences may exist in length of time in operation and program enrollment between individualized, mixed, and separate model programs.

As research on PSE programs is still evolving, descriptive studies are needed to address two critical gaps in our knowledge. First, as most reports have been program descriptions and surveys that were limited either geographically (Grigal et al., 2001; Neubert et al., 2004) or by small sample size (Hart et al., 2004) there remains a paucity of information on the general characteristics of PSE programs from a national perspective. As these types of programs have developed in isolation through the efforts of family members and practitioners (Hart et al.) information on the program enrollment, admissions criteria, responsibilities for funding and operation, and the purpose of PSE programs is needed. Second, more information is needed on the extent to which students with IDD are participating in college classes. Although Neubert et al. found that approximately one third of students with IDD in PSE programs in Maryland were participating in college classes, there remains a need to examine the extent to which this is occurring on a national level. Given the relatively recent philosophical shift from segregated programs to programs that provide opportunities for students with IDD to participate in inclusive college classes and given claims that transition-age students with IDD are attending college through these programs, an examination of the extent to which students with IDD are participating in college classes and the types of classes in which they are participating is needed to provide a realistic picture of the postsecondary education opportunities provided through PSE programs.

The purpose of the present study was to address some of the questions that remain about the nature of PSE programs and access to college classes through a national survey of these types of programs. Two broad research questions were targeted by the survey:

1. What are the overall characteristics of PSE programs that serve students with IDD who are ages 18–21 and still receiving special education services? Specifically, this survey focused on answering questions about the prevalence of each type of program model and location, responsibilities for operation and funding, and whether programs were time-limited based on grant funding or were funded through sustainable sources. Additionally, the survey targeted questions about program enrollment, admissions criteria, and the purpose of participating in a PSE program.
2. To what extent are students with IDD participating in college classes? Specifically, this survey focused on describing the percentage of students in PSE programs taking college classes, the prevalence of each method of participation in college classes (e.g., formally enrolling in a class for credit or audit or informally taking a class by sitting in), and whether this differs either by students' academic abilities or disabilities. Finally, the survey focused on questions regarding the types of college classes taken by students with IDD and the extent to which students with IDD are provided with modifications and accommodations to participate in college classes.

Across all research questions, differences

between types of models (individualized, mixed, and separate) and program locations (four-year college or university and two-year or community college) were examined.

Method

Survey Development

A web survey format was chosen to increase the ease with which participants could access the survey and to reduce the costs of conducting a national survey. Survey questions were developed based on the research questions and an online survey was constructed in line with the principles for web survey design proposed by Dillman (1999) using the Survey Monkey website. The web survey was reviewed by two experts who had conducted previous surveys of PSE programs and revisions were made based on their feedback. The survey was then piloted with eight program coordinators from PSE programs to ensure that the survey questions would solicit targeted information. The final survey consisted of 11 questions relating to general characteristics followed by 8 questions relating to college classes. The format of responses to questions included open ended responses, yes/no/don't know responses, or selection of responses from a list either through drop down menus allowing single responses or check boxes allowing multiple responses.

Survey Implementation and Procedures

The survey was submitted to coordinators of PSE programs nationwide between August and December, 2008. A national database of PSE programs for individuals with IDD, Think College (www.thinkcollege.net), was used to locate programs for the survey. The Think College database was developed by the Institute for Community Inclusion at the University of Massachusetts in Boston through a grant from the U.S. Department of Education, Office of Special Education Programs and is updated regularly. This database comprised the most recent information on programs known to researchers who had conducted previous surveys (D. Hart, personal communication, August 26, 2008). All programs listed in this database provided access to postsecondary education for individuals with IDD. However, it was clear from an initial examination of programs listed in the database that many of these programs were not exclusively for transition-age youth with IDD as some programs served both adults and transition-age youth with IDD and some programs served individuals with other disabilities as well as those with IDD. Furthermore, some programs that offered opportunities for postsecondary education were part of larger programs that may not have been located on a college campus. For these reasons, clear guidelines for selecting programs from the database in line with the purpose of the survey were developed. Programs were deemed to be eligible for inclusion in the study if they (a) provided access to the campus of a postsecondary education institution (e.g., four-year or two-year university or college or community college), (b) served students with IDD, (c) served students who were ages 18–21 and who were still receiving special education services, and (d) were located in the United States. Programs were excluded if they did not provide access to a college campus, did not serve students with IDD, or served only adults who had already graduated from high school. A total of 87 programs in the database were identified as eligible for inclusion.

Program coordinators who were knowledgeable about both the structure and operation of programs and the activities of individual students were targeted to provide information for the study. Coordinators of all eligible programs were contacted via e-mail to explain the purpose of the study, provide instructions for completing the survey, and provide a link to the survey website. Follow-up e-mails were sent three times to coordinators who did not respond to initial and subsequent e-mail requests. A total of 58 responses to the survey were completed. However, six survey responses were excluded from analyses because coordinators reported that these programs either did not provide access to a college campus, did not serve students who were still receiving special education services (i.e., only served adults with disabilities), or did not serve students with IDD (i.e., served only students with learning disabilities). After removing these responses, 52 program coordinators

completed the survey for a response rate of 64% out of 81 eligible programs.

Analyses

Descriptive methods were employed to analyze responses to survey questions. When calculation of mean scores was necessary, the data package SPSS was used to look for outliers in the data. Median scores were also calculated when outliers were found. Qualitative analysis was used to categorize the types of college classes reported by the program coordinators.

Results

Research Question 1: Characteristics of Programs

Program model type, location, operation and funding structure, and sustainability. General characteristics of programs are provided in Table 1. The majority of programs were mixed model (n = 40) with fewer programs of the individualized and separate model types (n = 6 of each type). More programs were located on two-year or community college campuses than four-year college/university campuses (57.7% vs. 42.3% of programs respectively). No difference in the type of program model by the location of the program was discernible, with approximately equal proportions of individualized, mixed, and separate models across two-year college and four-year college/university campuses.

The majority of programs (55.8%) were operated by school districts but may also have been operated by the college (21.2%), an outside organization (17.3%), or through a collaborative partnership between the school district and the college (7.7% overall but 50% of individualized model programs). Almost all programs were funded by school districts (86.5%). Student tuition was the second most frequently cited funding source after school district funds (25%), with the exception of individual programs in which student tuition was not a source of funding. Federal grants were relatively rare across the sample (13.5%). Other funding sources including vocational rehabilitation or Medicaid funds, other grants (e.g., National Down Syndrome Society grant), and fundraising were used by 13.5% of programs. To assess whether programs were sustainable based on the present funding structure, program respondents were asked if programs were time-limited based on grant funding or if the program was anticipated to continue given the present funding structure. Almost all program respondents indicated that their programs were sustainable given the present funding structure: only two programs in this sample were time-limited based on funding.

Program enrollment. Program respondents were asked to provide the number of students enrolled in their program who spent time on a college campus (some programs included students who did not participate on campus). The average number of students enrolled in PSE programs overall is shown in Table 1. As these numbers varied greatly, both means and medians are reported as well as the range in responses. Across all programs, median program enrollment was only 12 students, although a handful of programs with much larger enrollment resulted in a higher average number of students enrolled (M = 24.9). Greater numbers of students were enrolled on average by separate model (M = 24, Mdn = 20) and mixed model (M = 26.9, Mdn = 12) programs than individualized model (M = 13.4, Mdn = 7) programs.

Admission into PSE programs. The criteria used by PSE programs for admitting students with disabilities are shown in Table 2. Program respondents were asked to indicate the admissions criteria they used as well as any criteria that were used to exclude students from their programs. Overall, the main criteria for admission were that the student must be over a specified age (87% of programs), have indicated a desire to be on a college campus (52%), and be in a particular school district (46%). Mixed and separate model programs also considered other criteria such as completion of a specified number of years of high school (38% of mixed model and 67% of separate model programs) or prerequisite experiences (18% and 50%), demonstration of prerequisite skills (38% and 33%), and the student's ability to navigate to and around campus (35% and 33%; and 33% and 17% respectively). The majority of mixed and separate programs excluded students who exhibit challenging behavior (60% and 67% respec-

TABLE 1

Characteristics of Programs

Characteristic	*Overall*	*Individualized*	*Mixed*	*Separate*
Number of programs in survey	52	6	40	6
Location of program:				
2-year college	30 (57.7%)	3 (50%)	24 (60%)	3 (50%)
4-year college/university	22 (42.3%)	3 (50%)	16 (40%)	3 (50%)
Operated by:				
School district	29 (55.8%)	2 (33.3%)	24 (60%)	3 (50%)
College	11 (21.2%)	1 (16.7%)	10 (25%)	0
Other	9 (17.3%)	0	7 (17.5%)	2 (33%)
Collaboration: school and college	4 (7.7%)	3 (50%)	0	1 (16.7%)
Funded by:				
School district funds	45 (86.5%)	5 (83.3%)	35 (87.5%)	5 (83.3%)
Student tuition	13 (25%)	0	12 (30%)	1 (16.7%)
Federal grant	7 (13.5%)	2 (33.3%)	4 (10%)	1 (16.7%)
Other funding source	7 (13.5%)	0	6 (15%)	1 (16.7%)
Private donation	5 (9.6%)	1 (16.7%)	3 (7.5%)	1 (16.7%)
Don't know	1 (1.9%)	0	0	1 (16.7%)
Given the present funding structure:				
Program will continue	49 (94.2%)	5 (83.3%)	38 (95%)	6 (100%)
Program is time limited	2 (3.8%)	1 (16.7%)	1 (2.5%)	0
Don't know	1 (1.9%)	0	1 (2.5%)	0
Average number of students enrolled:				
M	24.9	13.4	26.9	24
Mdn	12	7	12	20
(range)	(1–160)	(4–25)	(1–160)	(17–35)

Note. Percentages for operation and funding do not total 100 as program respondents could choose more than one response.

tively) and at least a third of these programs also excluded students who lack safety skills (33% and 50%). No individualized programs reported excluding students on the basis of challenging behavior or a lack of safety skills. A higher proportion of individualized programs than mixed or separate programs stated that they have no criteria for excluding students (67% vs. 28% and 17% respectively).

Purpose of PSE programs. Program respondents were asked to select all purposes of their programs from a list of four specified options. The most frequently stated purpose of being on a college campus was for employment or opportunities for vocational training (90% of all programs). Following this, inclusion with same age peers (75%) and development of independent living skills (75%) were the next most frequently stated purposes of being on a college campus. Postsecondary education was listed as a purpose of being on a college campus by 100% of individualized programs and 67.5% of mixed model programs. No differences in the purpose of being on a college campus were perceived between programs located at two-year college and four-year college/university campuses.

Research Question 2: Participation in College Classes

Percentage of students with IDD taking college classes. Program respondents were asked to provide the number of students who were par-

TABLE 2

Admissions and Exclusion Criteria

Criterion	*Overall*	*Individualized*	*Mixed*	*Separate*
	Admission criteria			
Age of student	45 (87%)	5 (83%)	36 (90%)	4 (67%)
Student indicated desire to be on campus	27 (52%)	5 (83%)	20 (50%)	2 (33%)
Student must be in particular school district	24 (46%)	5 (83%)	16 (40%)	3 (50%)
Completed number of years of high school	20 (38%)	1 (17%)	15 (38%)	4 (67%)
Demonstrate prerequisite skills	18 (35%)	1 (17%)	15 (38%)	2 (33%)
Travel to campus independently	16 (31%)	0	14 (35%)	2 (33%)
Navigate around campus independently	16 (31%)	0	15 (38%)	1 (17%)
Completion of prerequisite experiences	11 (21%)	1 (17%)	7 (18%)	3 (50%)
We do not have admission criteria	2 (4%)	0	2 (5%)	0
Other	11 (21%)	3 (50%)	6 (15%)	2 (33%)
Don't know	1 (2%)	0	0	1 (17%)
	Exclusion criteria			
Student exhibits challenging behavior	27 (52%)	0	24 (60%)	4 (67%)
Student lacks safety skills	15 (29%)	0	13 (33%)	3 (50%)
We do not have exclusionary criteria	15 (29%)	4 (67%)	11 (28%)	1 (17%)
Student is unmotivated	14 (27%)	2 (33%)	11 (28%)	3 (50%)
Other	5 (10%)	0	5 (13%)	0
Don't know	1 (2%)	0	1 (3%)	0

Note. Percentages do not total 100 as program respondents could choose more than one response.

ticipating in college classes. The percentage of students taking college classes was calculated by dividing the total number of students reported to be taking college classes by the total number of students enrolled in all 52 PSE programs and multiplying by 100. This percentage was then calculated by type of model and location of program. Approximately one quarter (23.7%) of all students enrolled in PSE programs were taking college classes. The percentage of students in PSE programs who were participating in college classes was higher in individualized programs compared to mixed model programs (97.2% vs. 21%) but little difference in the percentage of students participating in college classes was perceived between programs located at two-year or community college campuses compared to four-year college/university campuses (19.9% vs. 21.8%). (Note that, by definition, separate model programs do not offer access to inclusive college activities including college classes). Interestingly, 100% of individualized model and 85% (n =34) of mixed model programs, reported that at least one student was taking a college class.

Prevalence of each method of class participation. For each student enrolled in a PSE program who took a college class in the 2007-8 school year, program respondents were asked to provide (a) a rating of the student's academic ability, (b) the primary disability classification of the student, and (c) the method in which the student was participating in each college class. To ascertain an understanding of the academic abilities of students with disabilities participating in college classes, program respondents were also asked to rate the academic ability of each student taking a college in their program using the following scale:

- Advanced: Reading, writing, or math ability is sufficient for the student to be able to take college level academic classes with no accommodations.
- Sufficient: Reading, writing, or math ability is sufficient for the student to be able to take academic classes with necessary accommodations.
- Limited: Reading, writing, or math ability is at the K-3rd grade level, student has limited

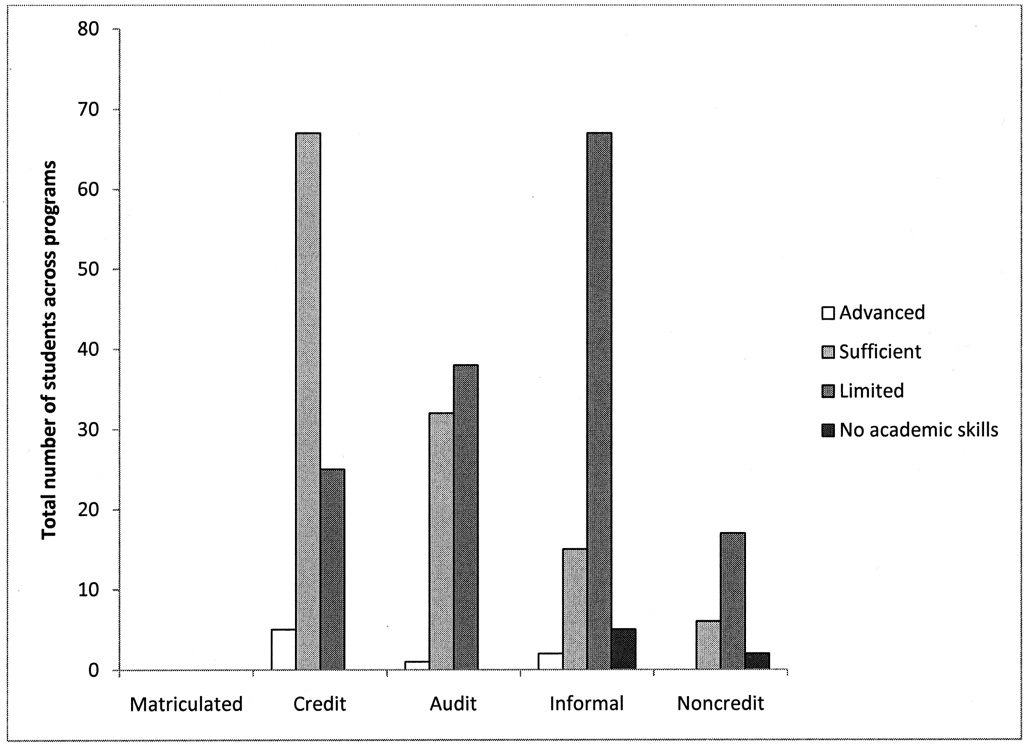

Figure 1. Methods of Participating in Classes by Students at each Academic Ability Level across Programs.

or emerging academic skills or has only functional use of these skills.

- No academic skills: Student has no reading, writing, or math skills.

Program respondents were asked to select one academic ability level for each student from a drop down list of these four options. However, as a previous survey by Hart et al. (2004) found that some PSE programs report serving students with learning disabilities or mental health disabilities, it was possible that analyses of the method by which students with IDD were participating in college classes could be skewed by the inclusion of students who would not typically be considered as having IDD. For this reason the disability classification of each student was requested even though programs had to serve students with IDD to be included in the survey and program respondents were asked throughout to consider only students with IDD when responding. For each student, program respondents then selected the method (or methods if more than one was applicable) by which the student was taking classes from a list of specified options: matriculated into a degree program, taking a college class for credit, auditing a college class, informally taking a college class by sitting in a class without being enrolled through the college, or taking a noncredit/continuing/adult education class either formally or informally. The methods of participating in college classes were then analyzed to determine if there were differences by academic ability rating, disability, or program location.

The number of students rated at each academic ability level participating in college classes by each method was totaled across all survey responses and results are presented in Figure 1. Overall, this figure shows that more students were taking college classes for credit (n = 97) than auditing classes (n = 71), taking classes informally (n = 89), or taking noncredit classes (n = 25). More students rated with advanced or sufficient academic skills

TABLE 3

Methods of Participating in College Classes by Students with each Type of Disability across Programs

Disability	*Matriculated*	*Credit*	*Audit*	*Informally*	*Noncredit*
Learning disability	0	39	8	1	6
Mild mental retardation	0	16	29	24	4
Moderate mental retardation	0	7	4	31	4
Severe mental retardation	0	0	0	0	2
Autism	0	9	11	18	6
Asperger's Syndrome	0	12	3	1	0
Traumatic brain injury	0	3	3	1	1
Other health impairment	0	3	4	0	2
Emotional/behavioral disorder	0	6	2	3	0
Other	0	2	7	6	0

were reported to be taking college classes either for credit or audit than taking college classes informally, whereas more students with limited academic skills were reported to be taking college classes informally than enrolled in classes for credit or audit.

The methods of participating in college classes by students with each type of disability are shown in Table 3. The number of students with each disability taking each type of class was totaled across all survey responses. For example, across all responses, 39 students listed as having a learning disability (LD) were taking a college class for credit. Note that students could be participating in classes by more than one method so these numbers cannot be totaled across columns to give the total number of students with each type of disability. Of students who were taking college classes for credit, the majority were classified as having LD (n = 39) but only a small number of students were classified as having IDD such as mild mental retardation (n = 16), moderate mental retardation (n = 7), autism (n = 9), and Asperger's (n = 12). However, the majority of students auditing classes were students with mild mental retardation (n = 29) and the majority of students listed as informally taking college classes were those with mild or moderate mental retardation or autism (n = 24, 31, and 18 respectively). Few students with severe mental retardation were listed as taking college classes (n = 2 for noncredit/ continuing/ adult education classes). No students with IDD were listed as being matriculated into a college degree program.

Further analysis of the methods of participating in college classes by location of programs suggested that more programs located at community colleges (n = 11) reported that students were taking college classes for credit than that students were auditing classes (n = 7), taking classes informally (n = 3), or taking noncredit classes (n = 7). However, more programs located at four-year college/university campuses reported that students were taking classes informally (n = 9) than taking college classes for credit (n = 3), auditing classes (n = 5) or taking noncredit classes (n = 3).

Types of college classes. Program respondents were asked to provide examples of the types of classes that students take for each method of participating in college classes. Content analysis was then conducted to cluster examples of similar courses into common categories to obtain counts of the relative frequencies of each type of class. This analysis suggested that the types of classes fell into seven categories as shown in Table 4. The types of classes in which students with IDD were reported to be participating varied greatly, from nonacademic classes such as health and fitness, arts, and leisure classes, to pre-college level and college-level academic classes, and vocational classes designed to prepare students for a specific career. The number of examples provided by program respondents in each category was then counted to look for differences in the method of participating in college classes across categories. Results are shown in Table 5. Two patterns were suggested through this analysis. First, classes

TABLE 4

Categories of Classes taken by Students

Category	*Definition*	*Examples*	*Primary method*
Vocational	Preparation for a specific trade, occupation, or vocation	Automotive Child care	Credit
Remedial and college preparation	Preparation for college through acquisition of basic skills/ knowledge	Basic reading Basic math	Credit
Computing	Instruction in general/ specific computer skills	Introduction to computers Keyboarding	Credit
Health and fitness	Instruction in sport skills/ opportunities for exercise	Swimming Dance	Audit/Informally
Arts	Instruction in arts (drama, music, and visual arts)	Acting Drawing	Audit/Informally
Academic	Instruction in specific subject areas	Early childhood education History	Audit/Informally
Leisure/home	Instruction in skills for use in the home/ for leisure	Cooking Baking	NA

reported as being taken for credit largely consisted of vocational and remedial classes, whereas classes reported as being taken informally or audited largely consisted of academic, health and fitness, and arts classes. Few examples of classes fell into the leisure/home category. Second, the majority of examples of classes taken for credit were provided by coordinators of programs located at two-year or community colleges, whereas the majority of examples of classes taken informally were provided by coordinators of programs located at four-year college/university campuses. Examples of classes that were audited were listed approximately equally by coordinators of programs located at two-year college and four-year college/university campuses. No patterns were detected in the examples of noncredit/ continuing/adult education classes.

Modifications and accommodations. To assess to what extent college classes are the same for students with IDD as for all college students, program coordinators were asked about modifications and accommodations that are typically made for students with IDD taking college classes. Accommodations that aid students to access the curriculum of a class or demonstrate mastery of content but that do not fundamentally alter what is to be learned or assessed are permissible under the Americans with Disabilities Act (ADA) of 1990 for students taking postsecondary education classes. Modifications that change the requirements for participation in postsecondary education classes are not permissible under ADA for classes that are taken for credit. It was therefore hypothesized that for college classes taken by students with IDD to include the same level of content and assessment as for all college students, these classes would need to be offered with accommodations only and without modifications. Modifications were de-

TABLE 5

Number of Examples of Classes in each Category and in each Program Location by Method of Participation

	Credit	*Audit*	*Informally*	*Noncredit*
	Category of class			
Vocational	21	7	4	11
Remedial and college preparation	20	6	3	2
Computing	10	4	2	9
Health and fitness	10	9	19	2
Arts	6	7	17	3
Academic	13	28	28	1
Leisure/home	2	0	1	1
	Location of program			
2-year or community college	71	34	4	21
4-year college/university	11	27	70	8

fined as changes to the curriculum or requirements for participation in a college class and accommodations were defined as alterations of environment, curriculum format, or equipment that allow students to gain access to content and complete assigned tasks but that do not fundamentally alter what is to be learned or assessed. Program respondents were first asked if modifications or accommodations were provided to students in their program and then asked to indicate which specific modifications or accommodations were made from a list of options. About half of all programs (52.5%) reported making modifications to college classes. Very few programs reported that modifications were made to classes taken for credit; more programs reported making modifications to classes that were either taken informally or audited (see Table 6). The most common modifications to classes that were audited or taken informally were modifications to assignments. Many

TABLE 6

Number of Programs Reporting each Type of Modification or Accommodation for each Method of Participation

	Credit	*Audit or informally*	*Noncredit*
	Modifications		
Modifications to curriculum	1	11	2
Modifications to assignments	3	13	4
Reduced number of assignments	1	10	1
Assignments not required	0	7	1
	Accommodations		
Accommodations available to all	14	16	9
Accommodations made by instructor	7	14	8
Accommodations made by PSE program	6	18	8
Changes to instructional delivery	2	6	5
Changes to assessment format	4	12	3
Support by program teacher/ aide	6	16	6
Support provided by peer mentor	7	12	3
Other	1	1	0

more programs reported making accommodations than modifications, with only one program reporting that accommodations were not made. The most frequently stated accommodation for credit classes was the use of accommodations that are available to all students by law (n = 14). A greater number of programs reported that accommodations were made by their program for college classes that were audited or taken informally than for credit classes and noncredit classes (n = 18 vs. 6 and 8 respectively). The least frequently cited accommodation across all types of college classes was changing instructional delivery.

Discussion

The results of this survey provide important information on the extent to which students with IDD are involved in PSE programs on college campuses and provided with the opportunity to participate in college classes. Sixty-four percent of the 81 PSE programs that met the study's inclusion criteria responded to the survey, resulting in the highest number of programs surveyed over previous studies. A number of important findings in regard to the characteristics of programs and participation of students with IDD in college classes are apparent.

General Characteristics

Several characteristics of these programs are of interest. The majority of programs were operated and funded by school districts, yet many other approaches to operation and funding were reported, indicating that there is no single approach to the organization of these programs. Although many programs may have been initiated through federal or state grants, sustainable sources of funding have developed with almost all programs now indicating that they are not time limited based on grant funding. The average number of students enrolled in PSE programs varied widely across programs, although individualized model programs had smaller enrollment than mixed and separate model programs. The relatively low enrollment sizes across all types of programs (Mdn = 12) suggest that PSE programs may not be an option for all students with IDD in a particular school district but may be reserved for particular types of students. Taken together, these findings indicate that although the majority of programs are funded and operated by school districts, use a mixed model approach, and enroll a small number of students, there are some programs that do not fit this description.

In regards to admissions criteria for PSE programs, the most frequently stated criterion for admission was the age of the student, indicating that these programs may be reserved for students ages 18–21 in line with age-appropriate inclusion. In addition to meeting age criterion, additional criteria that are considered are that the student has indicated a desire to be on campus, suggesting that students must be motivated to participate in a college-based experience, and that the student must be from a particular school district. Mixed and separate model programs also consider other admissions criteria and many exclude students who exhibit challenging behavior or who lack safety skills or the ability to travel to and around campus independently. These factors are not considered by individualized programs, suggesting that individualized programs can be more flexible in whom they choose to support. Indeed, one coordinator of an individualized model program explained that the student's motivation to participate in postsecondary education was of greater importance and stated, "We have not excluded students with challenging behavior if this other criteria of intellectual curiosity is satisfied." Taken together, these findings suggest that the majority of programs admit only those students who are motivated to be on a college campus and do not admit students who may present a higher level of need for support with appropriate behavior, safety, or mobility skills, but that there are certain programs, particularly individualized model programs, that may be willing or able to provide this level of support. Furthermore, as school districts are responsible for funding and operating the majority of PSE programs, it is important to note that opportunities for students with IDD to participate in PSE programs may be limited to those students who are enrolled in school districts that fund and operate PSE programs and not open to all students as a college would be.

A greater level of consensus was found in the purpose of being on a college campus. Almost all program coordinators responded that the purpose of students being on a college campus was for opportunities for employment or vocational training and three-quarters cited additional purposes of inclusion with same-age peers and opportunities for development of independent living skills. Interestingly, participation in college classes was cited less frequently than all three of these purposes with the exception of individualized model programs in which postsecondary education was unanimously stated as a purpose of being on a college campus. This finding suggests that we could perhaps refer more accurately to programs based on college campuses as *employment programs based in age-appropriate settings* rather than as postsecondary education programs.

Participation in College Classes

A number of approaches were taken to examine the extent to which students with IDD participate in college classes. Although a high percentage of programs reported that at least one student was taking a college class, only about one quarter of all students in PSE programs were participating in college classes. Differences were perceived in the percentage of students in mixed model programs compared to individualized model programs who were provided with this opportunity. Students in mixed model programs were much less likely than students in individualized model programs to be participating in college classes. No differences were perceived between two-year or community colleges and four-year colleges/universities in the percentage of students participating in classes.

Further examination of the participation in college classes by students of varying academic ability levels and disabilities also revealed differences in methods of participation. Students with less significant disabilities and higher academic ability levels were more likely to be participating in college classes in which they were formally enrolled either for credit or audit, whereas students with more significant disabilities and lower academic ability levels, in other words, those with IDD, were more likely to be informally participating in college classes. Differences were also found in the method of participating in college classes based on the location of the program. More programs located at two-year or community colleges reported that students were taking college classes for credit than for audit or informally, whereas more programs located at four-year college/university campuses reported that students were taking classes informally than taking college classes for credit or audit. In sum, it appears that the extent to which students with IDD are provided with the opportunity to participate in college classes and the method used to participate in classes may depend on several factors including the type of program model, the location of the program, and the level of academic ability of the student. This finding also suggests that the term "dual enrollment," as has been used in previous studies to describe students with IDD participating in PSE programs (e.g., Hart et al., 2004) may be used incorrectly if the majority of students with IDD who are still enrolled in their school districts are not formally enrolled in postsecondary education classes.

The types of college classes taken by students with disabilities appeared to differ based on the location of the PSE program and the method of participating in college classes. Programs based on two-year or community college campuses appear to be more likely to offer students the opportunity to participate in classes for credit than programs based on four-year college/university campuses where students may be more likely to take classes informally. The majority of classes taken for credit fell into the categories of vocational and remedial classes whereas the majority of classes taken informally or audited were academic, health and fitness, and arts classes. Combined with the findings regarding the factors that influence the participation in college classes, these findings suggest that (a) the most academically able students or those students in programs located at two-year or community colleges are the most likely to be taking classes for credit and these classes are most likely to be vocational or remedial classes in which they have the skills to participate or that match their transition goals, and (b) the less academically able students or those students in programs located at four-year colleges/universities are more likely to be taking classes

informally and these classes are most likely to be health and fitness or arts classes based on their interests or academic classes based on what is available to students in the program. Interestingly, a number of examples of academic classes reported by program respondents were education classes, suggesting that students who are less academically able may be invited into education-oriented classes by professors of education. This opportunity may arise from the involvement of professors of education in the initiation and operation of PSE programs or from an understanding and desire to support the goal of age-appropriate inclusion that may be more common among professors of education than other college professors.

To assess to what extent college classes are the same for students with IDD as for all college students, program coordinators were asked about modifications and accommodations that are typically made for students with IDD taking college classes. The findings of the survey indicate an interesting pattern: few programs reported making modifications to credit or noncredit classes in which students were formally enrolled; the majority of reported modifications were made to classes that were either audited or taken informally. From this finding we can infer that classes in which students are formally enrolled may look the same for students with IDD as for all college students, whereas classes in which students are "sitting in" may be modified to include fewer requirements or a reduced amount of content. This may be due to the requirements of the law that do not allow for significant changes to the curriculum or assessments to be made for students who are enrolled in a class through the college or university. Such changes may be permissible when students are unofficially taking the class. We can build further on this finding to incorporate results regarding the level of academic ability and the types of classes and method of participating in college class and make the following postulation: As the most academically able students or those students in programs located at two-year or community colleges are the most likely to be taking classes for credit and as these classes are most likely to be vocational or remedial classes in which they have the skills to participate, modifications to curriculum or assessment *are not needed or permissible*. However, as the less academically able students or those students in programs located at four-year colleges/universities are more likely to be taking classes informally and as these classes are most likely to be health and fitness or arts classes based on their interests or academic classes based on what is available to students in the program, modifications to curriculum or assessment *are most likely needed for students to be able to participate in classes and are permissible*. Given that students enrolled in classes for credit tended to be those with LD, one wonders whether students with IDD, in other words those with actual cognitive disabilities and low academic abilities, are indeed attending college as we currently define college to be. This raises several questions regarding the nature, purpose, and benefits of participation in college classes for students with IDD. If classes are modified to allow students with IDD to participate, how useful are these classes after modification? Are the skills and knowledge that are important to college students watered down or removed for students with IDD? If classes are not taken to help students reach their postschool education or employment goals, then what it the purpose of taking classes? Furthermore, how do students with IDD benefit from taking classes based on their interests or based on which professors are open to this idea? Are there real opportunities for social inclusion in these classes or are students just sitting in classes without support for academic learning or inclusion with same-age peers? These questions remain to be addressed through future research.

Limitations of the Study

Several limitations to the study are apparent and must be acknowledged. First, a number of problems were encountered in selecting eligible programs. The term "IDD" can be interpreted in different ways and, although a definition was provided in the instructions for the survey, many programs responded that they served students with LD and other disabilities that would not typically be defined as IDD. Additionally, the understanding of the term "graduated" is not clear for students who have completed all requirements for graduation

and have walked with their graduating class but who may continue to receive special education services until age 21. The difficulties in targeting only those programs who serve students with IDD ages 18–21 who are still receiving special education services are highlighted by the exclusion of six survey responses from programs that appeared to meet these clearly defined criteria but that, in reality, did not. For this reason, programs that did not appear to meet the criteria for inclusion in the study or that had not been included in the Think College database may have been excluded unnecessarily.

Second, an inherent limitation exists in reporting the frequency of responses across respondents. Differences in characteristics and in approaches to operating programs on college campuses do appear to exist between certain subgroups, such as two-year or community colleges and four-year colleges/universities or between individualized, mixed, and separate model types. However, it is possible that further subgroups exist within these categories, and reporting only the frequency of responses may cause some important information on these subgroups to be lost. Indeed, it is possible that the most frequent responses to survey items are not characteristic of any one program in reality. Identification of these trends in survey responses is difficult due to the small number of programs, and a different approach may be necessary to describe the true nature of subgroups of these programs.

Third, although the response rate of 64% is good for a typical survey, it may not be sufficient here. As there are relatively few programs that fit the criteria for participation in the survey, a response rate of less than 100% may mean that the findings are not representative of all programs. Findings of differences between individualized and mixed model programs must be interpreted with additional caution given that only six programs of all the respondents were individualized model programs.

Finally, the analysis of the types of college classes has many limitations. Program respondents were asked to list examples of the types of classes taken by students with IDD for each method of participation (e.g., examples of classes taken for credit, examples of classes that were audited, and so on). Asking program respondents to list the classes taken by each individual student along with disability, academic level, and method of participation in classes was deemed to be too cumbersome and may have resulted in a lower response rate on this item. However, in order to obtain a measure of the relative frequency of each category of class, the number of examples had to be counted. As some program respondents provided only one example for each method of participation whereas others provided a long list of examples for each method, counts of these examples may not accurately reflect the actual distribution of the categories of classes taken by students with IDD.

Despite these limitations, this study makes an important contribution to our understanding of the nature of PSE transition programs for students with IDD from a national perspective. Increasing our understanding of how these programs operate is important if these programs continue to grow in number and become a widely available option along the continuum of services for students with IDD. It is important that we have a realistic understanding of the opportunities provided to students with IDD, particularly in relation to access to college classes, to aid persons interested in initiating new programs and address the objections that may be held by school district and postsecondary education professionals.

Future Directions

Future research should continue to enhance our understanding of these programs, particularly in relation to the other PSE activities in which students with IDD are participating and the benefits of participating in both these activities and college classes with students without disabilities. Further examination of the nature and purpose of participation in college classes for students with IDD is warranted, particularly in relation to the purpose of participation in classes that are modified substantially or the purpose and benefits of participation in classes that are taken for other reasons than to help students reach their postschool education or employment goals. Exploration of the opportunities for social inclusion in college classes and the methods of providing support for academic learning and social in-

tegration are needed. A case study approach may address some of the limitations of the survey by providing an in-depth analysis of a small number of PSE programs that are representative of the population. This approach could be used to further examine the differences in opportunities available at programs located at two-year or community colleges compared to four-year college/university campuses or in the differences in the on-campus activities of students with higher academic abilities compared to those with lower academic abilities.

Although many questions remain to be addressed through research, this should not prohibit schools and postsecondary education institutions from forming partnerships to begin providing access to postsecondary education using whatever model and supports fit their individual students' needs. Regardless of the approach taken for providing supports on a college campus or the opportunities provided by a particular program for students with IDD to participate in activities with peers without disabilities, PSE programs for students with IDD ages 18–21 offer a promising opportunity to promote lifelong inclusion and self-determination. In order to explore the benefits that these programs may offer efforts should continue to increase awareness and development of these valuable opportunities.

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