



1-7-2015

Postsecondary inclusion for individuals with an intellectual disability and its effects on employment

Eric J. Moore

University of Tennessee, Knoxville, emoore50@vols.utk.edu

Amy Schelling

Grand Valley State University, schellia@gvsu.edu

Follow this and additional works at: https://trace.tennessee.edu/utk_theopubs



Part of the [Disability and Equity in Education Commons](#), [Higher Education Commons](#), and the [Special Education and Teaching Commons](#)

Recommended Citation

Moore, E. J., & Schelling, A. (2015). Postsecondary inclusion for individuals with an intellectual disability and its effects on employment. *Journal of Intellectual Disabilities*, 19(2), 130–148. <http://doi.org/10.1177/1744629514564448>

This Article is brought to you for free and open access by the Theory and Practice in Teacher Education at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Theory and Practice in Teacher Education Publications and Other Works by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

Postsecondary inclusion for individuals with an intellectual disability and its effects on employment

Eric J Moore

University of Tennessee, USA

Amy Schelling

Grand Valley State University, USA

Journal of Intellectual Disabilities
2015, Vol. 19(2) 130–148

© The Author(s) 2015

Reprints and permission:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1744629514564448

jid.sagepub.com



Date accepted: 21 November 2014

Abstract

Postsecondary education (PSE) programs for individuals with intellectual disabilities (IDs) have emerged exponentially in the United States over the last decade. Research regarding these postsecondary programs has largely been descriptive, and thus, there exists a need for qualitative, outcome-based research. In this comparative case report, graduates from two types of PSE programs for individuals with IDs are surveyed regarding employment outcomes and other personal developments. The results from each postsecondary program are compared with one another and also with a comparison group of individuals with IDs who did not attend a postsecondary program (utilizing the 2009 National Longitudinal Transition Study 2). This case demonstrates significant positive employment outcomes for individuals with IDs who attend postsecondary programs compared to those who do not attend such programs and highlights similarities and differences regarding outcomes of the two program types under consideration.

Keywords

ecological development, employment outcomes, integration, intellectual disabilities, postsecondary programs

Introduction

Postsecondary education (PSE) programs for individuals with intellectual disabilities (IDs) have rapidly emerged in America to meet a pragmatic and philosophical need in the past 10 years, but the programming has exceeded the research. Other literature has outlined the goals and nature of

Corresponding author:

Eric J Moore, University of Tennessee, Knoxville, TN 37996, USA.

Email: mrrericjmoore@gmail.com

these programs well. For example, Grigal et al. (2002) outline the goals of such programs as being “to give older students with disabilities age-appropriate settings for their final public education and transition experiences.” (p. 68) These authors go on to say that “Specific goals are designed through a person-centered planning process to meet the needs, preferences, and interests of the individual students” (p. 68). Their work also addresses a definition of PSE programs (or “settings”) as including “just about any setting adults have access to after high school, including 4-year colleges or universities, community colleges, and various locations in the community” (p. 69).

Although there exists a wealth of descriptive literature regarding these programs (e.g. Gaumer et al., 2004; Grigal et al., 2012a; Hart and Grigal, 2008; Papay and Bambara, 2011), recent literature both highlights the paucity of such research and suggests that one of the critical next steps in the research of PSE programs for individuals with IDs is to provide quantitative data to demonstrate outcomes for individuals with IDs who attend such PSE programs (e.g. Grigal et al., 2012a; Hart et al., 2010; Moon and Neubert, 2006).

Employment of individuals with IDs compared to general populace

This report is focused on data collected from sources in the United States; however, the issues herein are present around the world. For example, a report of the European Intellectual Disabilities Network (2003) underscores the difficulty individuals with ID face in obtaining employment. The report suggests that when individuals with ID do become employed, “it is precarious, low qualified and low paid” (p. 45). Other reports from international locations such as Eastern Europe Taiwan (Wang, 2013) and a combined report regarding Australia and the United Kingdom (Dempsey and Ford, 2009) demonstrate substantial prevalence of the issue of employment of individuals with IDs. The methods of addressing this issue, however, vary significantly by country.

In this report, we are focused exclusively on one method of addressing the issue of employment discrepancy for individuals with IDs, namely, the effect of PSE. In this report, we utilize data from one country (the United States). The data and conclusions drawn from this report, therefore, are not sufficient for international generalization. Even so, this study begins to shed light on the positive outcomes of this means of addressing the inequality noted on a global scale and thereby may be useful for researchers and educators both nationally and internationally as a basis for further investigation and trial practice.

Because this study was concerned with employment outcomes for individuals with IDs, it was necessary to establish the baseline for employment expectations. The National Longitudinal Transition Study 2 (NLTS-2) provides data specific to employment of individuals with IDs (and other disability types) regardless of any other variables. As such, it represents the general body of individuals with IDs, of whom few or none would have graduated from PSE programs at the time of the data collection (2009). Therefore, NLTS-2 provided an excellent baseline/comparison group for this study.

According to the NLTS-2, 35% of young adults (aged 21–25 years) with an ID and/or autism were employed at the time of the study. By means of comparison during the same period, the US Bureau of Labor Statistics (2009) shows average employment rates of 90.2%.

Additionally telling are the average wages of individuals with IDs compared with other groups. NLTS-2 reports that individuals with IDs earned a mean (average) hourly income of US\$7.80 h^{-1} in 2009, when the minimum wage was US\$7.25 h^{-1} . It further demonstrates that among those who were employed, 40.3% made less than the minimum wage of US\$7.25 h^{-1} and 91.7% made less than US\$10.50 h^{-1} . By way of contrast, the mean hourly income for the general population in

America was US\$20.90 in 2009 (Bureau of Labor Statistics, 2009). In summary, a contrast of employment statistics between individuals with IDs and the general populace in 2009 demonstrates gaps of 55% in terms of overall employment and 62.7% in mean income.

PSE programs designed for increasing employment of individuals with IDs

Paradigm shifts in the last two decades have led to awareness of the fundamental similarities of individuals with IDs and those without, and thereby, an assumption has emerged that that which benefits the general populace may also benefit individuals with IDs. By extension, PSE attendance could increase the employability of individuals with IDs as it does individuals without (Gilmore et al., 2001; Migliore and Butterworth, 2009; Wehman and Yasuada, 2005). For example, as researcher Dr Meg Grigal states this point explicitly, “Going to college is and always has been connected to greater rates of employment and higher wages. It is likely given the opportunity, and the means to document the outcomes, that students with intellectual disabilities would mirror these trends” (Grigal and Hart, 2010: 2).

The focus on using postsecondary programs to increase employment outcomes of individuals with IDs was demonstrated early in the development of PSE programming. A 2004 study, for example, showed that among 11 pilot programs in the Maryland area, “almost all students (87%) were involved in employment training in the community or on a college campus” (Neubert et al., 2004: 22). A follow-up, expanded national survey of transition programs in 2011 confirmed the primary focus on employment outcomes saying, “almost all program coordinators [of the 52 programs surveyed in this study] responded that the purpose of students [with an intellectual disability] being on a college campus was for opportunities for employment or vocational training” (Papay and Bambara, 2011: 90).

Employment of individuals with IDs who have attended a PSE program

Given the poor employment rate of individuals with IDs (NLTS-2, 2009) and the explicit attempt by PSE programming to rectify this issue (Grigal et al., 2012b), it follows to investigate the level of improvement in terms of employability for individuals with IDs who have graduated from the said PSE programs. However, this is an area in which current literature is significantly lacking.

The overwhelming majority of available literature regarding PSE programs for individuals with IDs is descriptive in nature (Gaumer et al., 2004; Grigal et al., 2001, 2012a; Hart and Grigal, 2008; Hart et al., 2004; Neubert et al., 2004; Papay and Bambara, 2011; Zafft et al., 2004). Grigal, Hart, and Weir explicate this point, suggesting that “there is a need for further research to understand how PSE impacts employment outcomes for people with an intellectual disability, and to fully understand how the various characteristics and practices used by PSE initiatives impact employment outcomes” (Grigal et al., 2012a: 232).

That being said, there have been some reports regarding outcome of individuals with IDs who have attended PSE programs. Data collected from these different studies show wide variation in the degree to which PSE programs are successful in providing for employment-based outcomes of students but, nevertheless, consistently demonstrate increased success for attendees and graduates compared to those without postsecondary experience.

For example, a 2012 analysis of American Community Survey data revealed some justification for the promotion of PSE as a means of increasing employment in that 43% of individuals

with IDs who attended college without earning a degree and did not have social security income were employed in 2010, compared to 31% of the same demographic who had attained only a secondary school diploma and 19% who had attended, but not completed, secondary school (Smith et al., 2012).

Likewise, a 2009 study following individuals with IDs who employed the services of vocational rehabilitation showed that while 32% of individuals who did not attend any PSE were employed, this number moved up to 48% of those who did attend, but did not earn a degree, and 58% of those who attended a PSE and did earn a degree (Migliore and Butterworth, 2009).

A 2010 case study of two transition program schools in Connecticut and Maryland, respectively, demonstrated even higher degrees of success as 83% and 72% of respective graduates earned paid employment upon exiting the program (Grigal and Dwyer, 2010).

In addition to positive correlation between employment and level of education, other employment-related benefits have been chronicled. For example, a 2004 case study of 40 youths with significant disabilities who did and did not attend PSE revealed that:

- a. those with PSE experience were more likely to be employed in competitive work than in sheltered employment and
- b. those who participated in PSE and who were engaged in competitive employment were less likely to need employment supports, compared to their counterparts without PSE (Zafft et al., 2004: 50).

These reports, though few and limited in nature, begin to provide a pattern whereby the original assumption that PSE may increase the employability of individuals with IDs appears to be correct. Nevertheless, the limitation of available data does justify the call for further and more comprehensive quantitative studies present in recent literature (Grigal et al., 2012a; Thoma, 2012).

In response to this call for research, we formulated the following questions to guide a comparative case report: how do the employability and income levels among students with IDs who graduated from an integrated program and a specialized program¹ compare? Further, are there any differences in employability and income that may exist between students with IDs who attended a PSE program and those who have not, as measured by available national data²?

The research question is further predicated on Bronfenbrenner's (1979) theory of ecological development. Bronfenbrenner's model suggests that humans simultaneously occupy multiple social ecosystems that maintain dynamic interactions; human development, therefore, must be understood through a holistic lens of these hierarchical ecosystems. According to Bronfenbrenner, there are four ecological levels that can be investigated:

1. Microsystem: "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics" (p. 22).
2. Mesosystem: "the interrelations among two or more settings in which the developing person actively participates (such as, for a child, the relations among home, school, and neighborhood peer group; for an adult, among family, work, and social life)" (p. 25).
3. Exosystem: "one or more settings that do not involve the developing person as an active participant, but in which events occur that affect or are affected by, what happens in the setting containing the developing person" (p. 25). Such as, for a child, this might be a

parent's workplace. Although the child does not interact with the workplace environment, positive or negative aspects of a parent's workplace may affect the child's home microsystem.

4. Macrosystem: the larger cultural world or society surrounding the developing person.

This might be understood graphically as follows. In this design, the microsystems, in which the individual is a part, overlap in places creating the mesosystems. The exosystems affect the microsystems and mesosystems, but the individual himself/herself is not part of the exosystems. All systems are part of the larger macrosystem (Figure 1).

This theory is salient for discussion of pedagogical theory in special education perhaps to an even greater extent than general education. The reason for this is that special education puts a high degree of focus on developing the individual himself/herself. For example, this point could be demonstrated through the use of individualized education programs. However, Bronfenbrenner's theory seems to suggest that this microscopic view of the student's needs may ultimately be of disservice to the student if educators are not considering how the student interacts in other roles beyond the microsystem of the classroom. A pertinent question may be not just "how are we helping students develop" but more specifically "how are we helping students develop *in the context* of the social systems to which they *do* belong and *will* belong?"

PSE programs for individuals with IDs have emerged to explicitly facilitate the migration from one microsystem (or one set of microsystems) to another (e.g. from high school to workplace and/or from living with caregivers to living independently) through the use of hands-on experience, training, and both direct and indirect instruction. However, there is apparent theoretical disagreement in how the PSE programs' own *microsystem* should be designed to facilitate student navigation of their other current and future *microsystems*, *mesosystems*, *exosystems*, and *macrosystems*. Because Bronfenbrenner's model underscores the impact of environment on the individual's development, this is a question of great importance.

Method

The authors began by applying for and receiving ethical approval for the methods of this study from the Grand Valley State University Institutional Review Board. Two groups of individuals from two PSE programs participated in this study: (a) program directors (e.g. "administrators") and (b) individuals with IDs who have graduated from the postsecondary programs (e.g. "graduates").

Data were collected through three sources:

1. Administrator interviews: A structured interview was conducted to collect information from special education administrators of PSE programs at one point in time. This component is hereinafter referred to as the "administrator interview."
2. Student surveys: A cross-sectional, web-based survey was administered to collect information from individuals who have graduated from one of the two PSE programs. This component is hereinafter referred to as the "student survey."
3. Public data: Data were collected from the NLTS-2 (2009) as well as from the participant PSE programs' Web sites and from the thinkcollege.net database regarding the program objectives, claims, recruitment practices, and so on. Data from the latter sources were used for further corroboration with what we learned from the administrators.

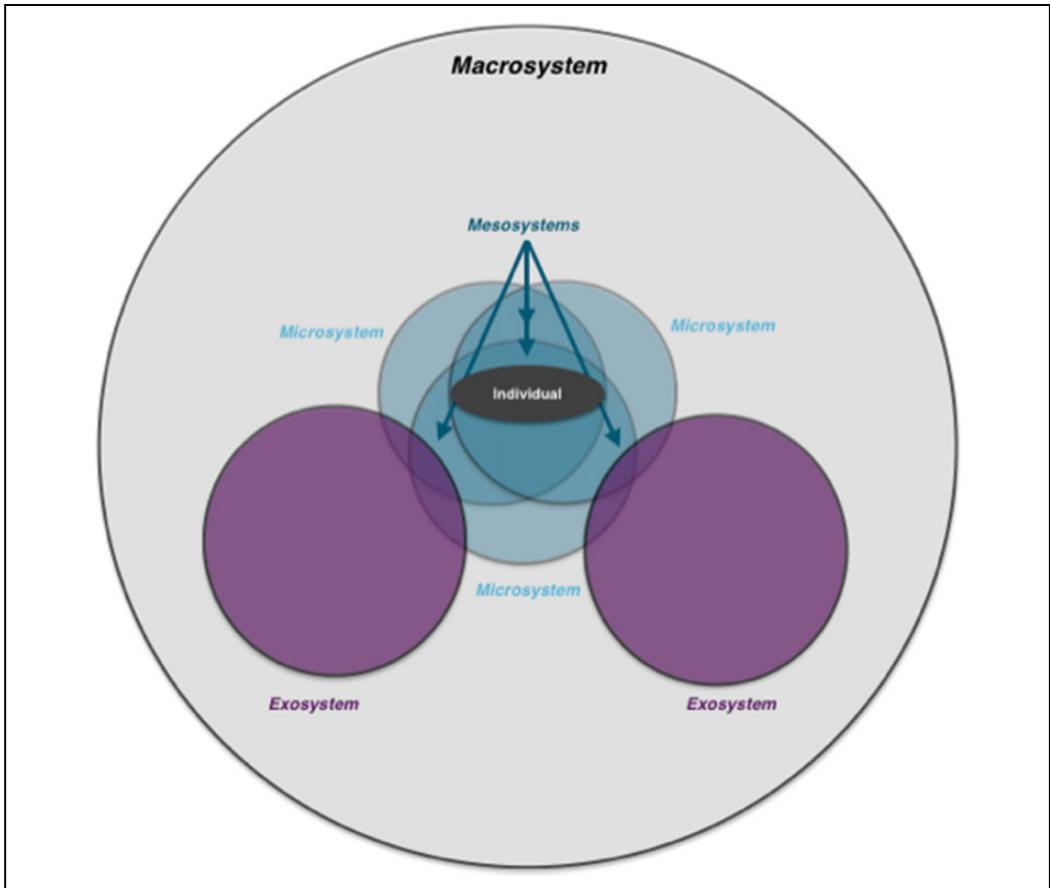


Figure 1. Graphical representation of Bronfenbrenner's ecological levels.

Analysis

The administrator interview questions are mostly qualitative in nature, and thus the responses are summarized for key themes to be presented with quotations drawn as appropriate. Three questions did deal with quantitative facts that allowed for a quantitative comparison between the two schools under investigation. These were integrated into the data tables populated otherwise by the data from the student survey.

The student survey formed the core quantitative component of the data collection. The data collected from this survey were designed to match the data that were collected through the NLTS-2. All relevant comparative data from NLTS-2 are presented in the form of frequency distribution tables. Thus, this report uses the same type of data tables for all comparative data generated from the student survey.

Definition of terms

Comprehensive transition program. A comprehensive transition program (CTP) is a government designation given when a PSE program meets an extensive set of guidelines set forth

regarding program structures, objectives, and integration practices as outlined in the Higher Education Opportunities Act of 2008.

Integrated program. The integrated program (also known as the “inclusive, individual support model”³) is a program in which students “receive individualized services (e.g., educational coach, tutor, technology, peer mentors, natural supports) in order to access college courses, certificate programs, and/or degree programs, for audit or credit” (Grigal et al., 2012a: 224).

Specialized program. The specialized program (also known as “substantially separate model”³) is a program in which “students with intellectual disabilities receive services in a postsecondary setting, but participate *only* in classes with other students with disabilities” (Grigal et al., 2012a: 224).

There are many characteristics of PSE programs. While we are concerned primarily with employment outcomes from two divergent programs, the various other factors added to the richness of comparison of the two programs. Being able to examine these allowed for a more in-depth analysis and consideration of how these characteristics were potentially influential toward the discovered outcomes.

Research design

Participants/subjects. Two schools participated in this research study, including two program directors and 26 total graduates. An informal invitation to participate in this study was sent out to 32 schools selected from the database of 210+ on the Think College Web site (thinkcollege.net). The 32 schools were prefiltered according to those that met the requirements of the study. Included in this filter were the following three elements:

- had graduated two or more classes of students (10 total students at minimum);
- were independent postsecondary programs, not extensions of secondary programs or run by public school districts; and
- one of the participant programs needed to be an integrated program and recognized as a CTP. The other would need to be a specialized program.

After initial contact was made, nine schools expressed willingness to participate. The low level of willingness was frequently attributed to lack of time and, for some, research burnout. Of those who were qualified for this study and were willing to participate, two that represented the most diametric opposition to one another in terms of program type, geographic location, university association, and other (potentially identifying) elements were selected in order to facilitate a richer qualitative exposition of the research question. In other words, if gains were noted for students who attend both of these programs, this would potentially be more meaningful in terms of the universal benefit of PSE programs for individuals with IDs than would be the same data from two similar institutions, which would support only that that type of institution had such effect.

Instrumentation. Two instruments were utilized for the collection of data in this study.

1. A structured interview was conducted to collect information from program directors of the PSE programs involved. This component is mentioned elsewhere as the administrator interview. Questions were designed to provide qualitative data that was used to

contextualize the quantitative data collected through the student surveys. These interviews occurred during the month of March 2014.

2. A Web-based survey was administered to collect information from individuals who had graduated from one of the two PSE programs involved in this study. The survey contained three sections dealing with questions of background information, community experience, and employment status. Most of the items in the survey correlated with items in the NLTS-2, which was used as the comparison group for this study. Survey data were collected throughout March and April 2014 from those who participated.

Results

Administrative interview: Thematic analysis

The administrator interview provides some context with which to understand the responses collected in the student survey. Highlights from the interviews are presented in summary format, below. The discussion of integration was the most central to this report, and therefore, is presented in heightened detail. For each theme, there is a brief introduction followed by a summary and/or discussion of the responses of the administrator (program director) at the integrated school and the specialized school, respectively.

Student admission. Student admission was an important variable to consider when comparing the programs involved in this study. It is important to recognize that the outcomes ought to be framed in comparison with the baseline of the students when they entered the program. It should follow that students with more advanced academic and social aptitudes should correlate with more advanced academic and social outcomes.

Both programs maintain similar minimum and maximum expectations for participants (e.g. both expect a minimum of a third-grade reading level but would also be unlikely to admit a student who could potentially pursue a college degree with support). The admissions boundaries have been enacted in order to enable targeting students who are most likely to benefit and succeed while enrolled in the programs that each school offered.

Program objectives. We felt it was important to have a clear understanding of what the programs held to be their guiding objectives. This would provide a basis for evaluation (i.e. to what degree have these objectives been met?). Again, assessing the programs based on the employment of its alumni is far more sensible if this objective is included in the program's design. Furthermore, analysis of program objective allowed for a cross-reference to the graduates' stated objectives (i.e. to what extent did the graduates' objectives match with the program's objectives?).

Again, there was a great deal of parallelism between the two programs. Both, with somewhat different wording, made the development of employment and social skills focal points of their respective programs and both provided a third goal related to the worldview enhancement of the students (self-advocacy and faith-based education, respectively, for the integrated and specialized programs).

Integration themes. One of the central variables in this study was that of the level of integration that students experience as part of their education in the two PSE programs under consideration. The

question was directly addressed in the interview with focus on what kinds of integrative experiences students have and how often they have them. Here, more than in any other category, there emerged significant differences between the two participant programs.

The administrator of the integrated program stressed that they indeed strive in manifold ways to be inclusive as possible in practice. Inclusion experiences are provided through natural inclusive opportunities, structured inclusive opportunities, and academic inclusive opportunities.

Natural inclusion is facilitated by the fact that the students take classes and meals and have social engagements on a major university campus, which is a naturally integrated setting. On average, students of the integrated program spend 32 h week⁻¹ in this setting. Some students have reported developing natural relationships with nondisabled peers through this experience. Included in the 32 h week⁻¹, each student is present for a mandatory 6–8 h. During this time, the program's students must be on campus but are "on their own." Students spend time in the student union, library, and so on. This time is intended for natural social learning and integration to occur without "programming."

Structured integration occurs in a multitude of ways in a web of social relationships. Each student of the integrated program has 6–10 peer mentors assigned to them; these peer mentors come from a range of major areas, including special education, psychology, engineering, leadership and development, and so on. Peer mentors offer friendship-based support for the students and interact with them in natural settings such as for lunch, exercise, tutoring, and so on. Additionally, students in the integrated program are invited to participate in inclusive activities such as sports. This system is designed to encourage the students to be included in campus events and social activities through their peer mentors, thereby experiencing natural social networking. The administrator of the integrated program stressed how integral this aspect of the program is to the success that the program's students experience.

Academic inclusion takes the forms of internships and auditing three nonspecialized university courses with nondisabled peers. The students choose the courses they would like to take with some guidance as necessary.

Taken on the whole, students in the integrated program spend approximately 75% of their time in activities, classwork, and leisure with nondisabled peers.

The administrator of the specialized program stressed the variety of ways in which the students who attended the specialized school were involved with nondisabled people, despite the specialized setting of the campus. However, whereas the integrated program had potential for more "natural" integration, the specialized program utilized planned or structured integration more extensively. Nevertheless, some opportunities for natural integration do occur when the program's students are involved in the general community. There were four ways in which structured integration takes form, according to the program administrator: (1) internships (especially the third year internship)—these are focused on placements in the general community working for and with people without IDs; (2) interaction with nondisabled peers on a local college campus⁴; (3) involvement and active participation in local religious institutions (e.g. churches); and (4) interaction with college-aged, nondisabled peers who volunteer to spend time with the students of the specialized school.

The administrator of the specialized program stressed that the program is designed to ensure opportunities for the students to grow and be equipped for integration. The administrator suggested that students are being trained to impact their community through service, training, and employment with methods and settings that are designed to be effective for the demographic attending the program.

Student survey data

A total of 34 graduates (of a possible 35) participated in the survey (either partially or in entirety), including 11 from the integrated program and 23 from the specialized program. Both groups graduated between 2011 and 2013.

Of those who participated, 21 of the 34 identified themselves as having a “mild ID,” 3 of the 34 claimed diagnosis of “autism spectrum disorder,” 2 reported a “multiple disabilities” classification, and a further 4 of the 34 reported “other” disabilities including visual agnosia, dyslexia, and attention-deficit hyperactivity disorder. Eight graduates who responded elsewhere chose not to respond to this question.

Self-reported goals and outcomes. This section provides data collected from the graduate’s responses to questions in the survey that dealt with contextualizing their employment outcomes. Graduates were asked what they wanted to accomplish while they were attending their postsecondary programs, then were asked in a separate question what things they felt they had accomplished. We used this information to ensure that the question of employment outcomes was appropriate for the graduates. If, for example, a significant number of graduates never intended to seek employment, then not being employed would not denote any shortcoming.

As it turned out, a high percentage of graduates from either school *intended* to “earn a competitive job” after graduation (75% and 87%, respectively, for the integrated and specialized programs). Other high occurrences included the desire to “improve social skills” (100%/87%, respectively), “gain more independence” (92%/100%), “make new friends” (100%/93%), and “improve basic academic skills” (66%/87%). In all cases, for both schools, the graduates reported high degrees of accomplishment of these stated goals (ranging from 92% to 133% success rate as measured against the baseline goals⁵).

Graduates also were asked a set of questions related to their social interactions with both individuals with disabilities and those without. There was a higher degree of parallelism in the graduate responses for these questions than we had anticipated. For example, in the question regarding degree of social interaction with other individuals with disabilities, and given four degrees of intensity (“not at all,” “a little,” “some,” and “a lot”), 92% of graduates from the integrated program and 93% of graduates from the specialized program responded in the top two degrees (“some” or “a lot”), with a higher occurrence of the latter for the specialized program.

Likewise, when prompted regarding degree of social interaction with individuals without disabilities, 100% of those in the integrated program and 93% of those in the specialized program responded with the top two degrees. However, we have reflected that it is likely that the subjective nature of this question affected student responses. It does not differentiate, for example, between faculty and employees who serve the PSE program and develop relationships with the students from nondisabled peers or community members without affiliation to the program. A distinction of this form would be helpful to make in future surveys.

Graduates of both programs also responded similarly to questions regarding community preparedness. Asked how well they felt their postsecondary program had prepared them for life in the general community after graduation, 92% of the graduates from the integrated program and 100% of the graduates from the specialized program reported feeling “quite a bit more prepared . . .” or “much better prepared . . .”

Table 1. Employment status: responses to survey.

	Integrated	Specialized	NLTS-2 ^a
Employed since high school?	100%	100%	88.9%
Employed in past two years?	100%	100%	53.5%
Employed in past two years (outside home or former school)?	91%	87%	53.5% ^b
Currently employed?	73%	91%	37.2%

NLTS: National Longitudinal Transition Study-2 (NLTS-2).

^aData from individuals identified as having an intellectual disability, only.

^bThis question is not included in the NLTS-2, so we carried over “employed in past two years” as a viable estimate.

Employment outcomes. This section presents the data most immediately relevant to the research question. It is also here in which data collected from the NLTS-2 become useful as a comparison group (Table 1).

Three of the four questions reported above were chosen to match the NLTS-2. The fourth, “Employed in the past two years (outside home or former school)” was included because we felt there was potential for the data in the second question (“employed in past two years?”) to be skewed by students who became employed by their former PSE program upon graduation. We felt it important to differentiate between employment by the program and employment in the larger community.

These numbers for each category are encouraging, but some reflection is necessary to interpret them, as there are multiple variables that are different for the sample of individuals who participated in the NLTS-2 compared to those who participated in this study.

For example, the question “employed since high school” reflects different factors that may have skewed the numbers for each group. Whereas the participants in the NLTS-2 survey represent a wide range of ages (i.e. some of the participants may have been out of high school for some time), the responses from participants in our survey are young adults, not far removed from high school. However, our survey participant’s responses may reflect internships or school-organized employment. The nature of the question also allows for possible employment between high school and admissions to the PSE program. For the second question, “employed in the past two years,” the advantage for NLTS-2 participants is lost but still remains for our survey participants, thus reducing the degree to which the responses may be considered significant. This fact was the motivation for the inclusion of the third question “employed in the past two years (outside home or former school),” which gives a more accurate representation of the difference.

It became evident that this differentiation was worthwhile; there were some graduates employed by their alma mater. Even when the students who answered negatively for “employed in the past two years (outside home or former school)” were filtered out, the employment rate is still markedly higher here than in the NLTS-2 comparison group.

The final question (“currently employed?”) has a smaller scope of time than the preceding questions and thus lower rates of employment are to be expected (which is also reflected in the NLTS-2 data). Even so, the rate of current employment for graduates of both PSE programs is substantially higher than that of the NLTS-2 comparison group.

We were not concerned only with the rate of employment, however, but also the quality of employment (as defined by hours of work and type of work). In order to more completely

Table 2. Self-reported hours of employment.

	Integrated	Specialized	NLTS-2 ^a
<20 h week ⁻¹	64%	20%	24.8%
20–34 h week ⁻¹	36%	73%	34.2%
35–40+ h week ⁻¹	0%	7%	41%

NLTS: National Longitudinal Transition Study-2.

^aData from individuals identified as having an intellectual disability, only.

Table 3. Self-reported employment position.

Occupation category	Integrated	Specialized	NLTS-2 (intellectual disability only)
Food preparation	8%	47%	26%
Janitorial/custodial	0%	33%	13.8%
Office support	58%	0%	10.6%
Production (e.g. factory)	0%	7%	18.9%
Transportation/delivery	0%	0%	8.7%
Teaching/training/librarian	17%	13%	2.3%
Personal care	0%	0%	3.1%
Sales	17%	0%	5%
Construction and excavation	0%	0%	2%
Health-care support	0%	0%	1.2%
Other	0%	0%	5.4%

NLTS: National Longitudinal Transition Study-2.

understand the employment trend, recognizing the fact of employment and also the conditions of employment is important. Tables 2 to 4 provide some of these conditional factors.

Table 2 demonstrates that though employment rates are very high for the graduates of both programs, the mean hours of employment are relatively low compared with the comparison group. One hundred percent of the integrated program graduates and 93% of the specialized program graduates are (or were) employed on a part-time basis (below 35 h week⁻¹) compared to 59% of the comparison group participants.

Table 3 was truncated to include only the options that had responses (<0%) in at least one column. Other options, which all received 0% response from all three groups, were science/engineering/computer; programming/mathematician; art, design, entertainment; sports and media (newspaper, news stations, etc.); health-care practitioner (e.g. nurse or doctor); protective services (e.g. police or firefighter); installation/maintenance/repair (e.g. window installation, heating and cooling, plumbing, or mechanic); and military specific. All options were drawn directly from the NLTS-2.

These data demonstrate that there are many areas of employment in which people with IDs have not traditionally been employed (e.g. protective services), and the current sample does not demonstrate any “broken ground” according to the categories surveyed (i.e. where there is a 0% frequency in the NLTS-2 comparison group, there remains a 0% frequency for the graduates of the PSE programs).

Table 4. Hourly wage.

	Integrated	Specialized	NLTS-2 (intellectual disability only)
Less than US\$7.25 h ⁻¹	9%	26%	40.3%
US\$7.25–8.50 h ⁻¹	27%	60%	31.8%
US\$8.51–10.50 h ⁻¹	36%	13%	19.6%
US\$10.51–14.50 h ⁻¹	27%	0%	6.4%
US\$14.51+ h ⁻¹	0%	0%	1.9%

NLTS: National Longitudinal Transition Study-2.

A significant deviation exists, however, between the integrated program and the specialized program. While the specialized program graduates are employed at high frequencies in the two areas that are also “traditionally” the high frequencies for individuals with IDs (food preparation and janitorial/custodial work), the graduates of the integrated program showed highest frequencies in office support (58%) and then a split (at 17%) for sales and teaching/librarian work. Only one graduate (8%) from the surveyed graduates of the integrated program is (or was) employed in a food preparation capacity and none are employed in janitorial/custodial services.

The NLTS-2 was conducted in 2009, shortly after the federal minimum wage was set at US\$7.25 h⁻¹. Because the NLTS-2 is being used as the comparison group, the same wage “bands” (e.g. US\$8.51–10.50 h⁻¹) were used for this study. The federal minimum wage remains at US\$7.25 h⁻¹ at the time of this report, though some states have higher state minimum wage. Depending on where the graduates are geographically employed, they may be earning “minimum wage” even if they are reporting income in the higher bands. Neither PSE program, however, is based in a state with a minimum wage higher than the federal minimum wage.

It should be noted that those earning below minimum wage in the NLTS-2 are most likely representing individuals with IDs who are employed in “sheltered workshops,” which invoke section 14(c) of the Fair Labor Standards Act. This Act allows certain certified employers employ persons with disabilities at a rate less than the minimum wage (National Council on Disability, 2012).

Table 4 demonstrates higher estimated mean hourly rate for graduates of the integrated program compared to the specialized program group and comparison group.

Discussion

The introduction to this study began by highlighting the problem of discrepancy between the statistical employment and income of individuals with IDs and members of the general population. The research collected in this study for the comparison group was drawn from the same source as that presented in the literature (i.e. the NLTS-2). As was mentioned earlier, a comparison of data from the US Bureau of Labor Statistics (2009) and the NLTS-2 demonstrates that gaps of 55% existed in terms of overall employment and 62.7% in mean income between individuals with IDs and the general population in 2009. Although this issue of rate of employment was significantly mitigated through graduation from PSE programs in this case study, the income discrepancy was clearly not abolished for the graduates who participated in this study.

Student survey results

Steep gains were noted in rates of employment for graduates from both the integrated and specialized programs. These gains may be summarized as:

- 11.1% (maximum) increase for both programs compared to the comparison group in the “since high school” category,
- 46.5% (maximum) increase for graduates of both programs compared to the comparison group in “the last two years” category, and
- Approximately 36%/54% increase for graduates of the integrated/specialized programs, respectively, for the “currently employed” category.

These encouraging findings may support the notion that as “segregation begets segregation,” “integration begets integration.” That is, the experience of training and immersion in internship situations with nondisabled people may be one of the contributing factors that led to the experience of competitive employment among PSE program graduates in this case study (Grigal et al., 2012b).

Situation among other studies. The data collected from this case study generally complemented trends already occurring in the studies reviewed in the literature (Grigal et al., 2010; Migliore and Butterworth, 2009; Zafft et al., 2004). In all studies conducted on this topic, marked improvement has been demonstrated in employment rates for individuals with IDs who attended a PSE program; however, the degree to which this growth was experienced differs. For example, Migliore and Butterworth (2009) demonstrate an employment rate among PSE graduates with IDs of 58%. Grigal and Dwyer (2010) examined a comparison of two schools in their study and reported employment rates of 83% and 73%, respectively, for the graduates. In the current study, graduates reported being currently employed at rates of 73% and 91%, respectively, for the integrated and specialized programs.

In this way, the data collected as a result of this study corroborate the pattern of increased employment for individuals with IDs who attended PSE programs that has already been demonstrated in existing literature (Grigal and Dwyer, 2010; Migliore and Butterworth, 2009; Zafft et al., 2004).

Reflection on the hypotheses. It was noted that in contrast to the sharp distinction between the test groups and the comparison group, there was no discrepancy in terms of rate of employment between the two test groups themselves (integrated vs. specialized).

The surveyed graduates of both the integrated and specialized programs worked for a lower approximated median number of hours than those surveyed in the NLTS-2, which was contrary to our expectations. Also contrary was the fact that graduates from the specialized program worked more hours (approximate average) than those in the integrated program.

Median income for surveyed graduates from the specialized program was about equal to the median income for individuals with disabilities surveyed in the NLTS-2, suggesting no closure of the gap in this regard. The surveyed graduates of the integrated program fared somewhat better in this domain, reducing the median income gap compared with the general population from 62.7% to approximately 50%.

Administrator interview results

The administrator interview provided necessary justification for the comparison of the graduates from the two programs inasmuch as the programs shared several key similarities in terms of entry expectations, program objectives, and employment training opportunities. Although many other variables do exist in this comparative report, these were key in assuring that a discussion of comparative employment outcomes for the graduates of these programs could be reasonably completed.

This information was also useful in that, for both programs, the program objectives coincided with the student survey questions related to graduate-identified goals and outcomes. For example, administrators of both programs stated that articulated desire for competitive employment was a prerequisite to entry into their programs. As such, one would expect to see this reflected in the graduates' declared goals. It was reported as such by 75% of the integrated program graduates and 87% of the specialized program graduates. The relatively high prevalence of these stated goals indicates a correlation between program objective and student objective, which is important for motivation and development.

The expectation that is put on employment in both programs suggests that employment outcomes for the students can be used as an assessment of the efficacy of the programs, much as how alumni employment is often used to measure the success of other university programs for the general population.

The information gained from the administrator interviews also provides insight into some of the details of the survey responses. For example, the relatively high representation of graduates from the specialized program in the food preparation industry (47% of specialized program graduates) reflects the fact that culinary arts is one of the "majors" for which students attend the school. In this light, the high percentage of graduates working in food preparation may actually reflect a positive development, as this would suggest that the students who attended the program are now working in their "major" field. It would be worth following up on these responses for more detail regarding where the graduates are employed. There is a substantial difference between working the line in a fast-food restaurant and working as a *sous chef* in a fancy hotel kitchen, for example.

Reflection on theoretical framework

Bronfenbrenner's seminal research on the influence of contexts on the development of the individual was highly pertinent when considering the differences between the contexts in which graduates were given opportunity to grow at their respective PSE programs. Information collected from the interviews revealed explicit attempts to modify the higher levels (e.g. *macrosystem* and *exosystem*) of the now-graduates' social environment while empowering and enabling them to be independently successful in their *microsystems* and in navigating *mesosystems*.

For example, the administrators from both programs spoke of the work that they and their team are doing to help change the local culture (related to *macrosystem*, *exosystem*, and *microsystem*) through direct education of business owners, and so on regarding how to work with someone with an ID and through community service projects and other forms of community involvement designed in part to help reshape the way people in the community view individuals with IDs.

Both programs, to different degrees and in different ways, also sought to develop how students deal with various *microsystems* and *mesosystem* interactions of academic, social, and community settings. For example, coursework may have been designed to help students learn social nuances of these different settings and the interactions that occur between them. Finally, both programs sought

to develop students' ability to adapt to the specific *microsystem* of a place of employment through direct training and hands-on experiences.

This broad approach is far more holistic (contextual) and far more developmentally focused than that of attempting to push individuals with IDs directly from high school into the workforce. Such a direct, high school to workforce approach seems to often result in an individual with an ID who is unprepared for employment meeting an employer who is unprepared to work with an individual with an ID, and thus failure becomes the logical expectation. On the contrary, the PSE transition programs guide the student through the complex skills and knowledge necessary for successful employment (etc.) so as to enable them to meet with success. Simultaneously, such programs work with the larger contexts of their local society to educate and enable people in the community to be ready to successfully receive individuals with IDs to the benefit of all.

However, despite the clear positive outcomes for the individuals involved in this case study, which may corroborate Bronfenbrenner's theory, the limited sample size prevents generalization at this point. The study was also inconclusive regarding the complex effects of the different *microsystems* presented by the two programs on the graduates. The former will require more comprehensive quantitative data whereas the latter would benefit from a more comprehensive qualitative study.

Delimitations and limitations of the study

The design of this study involved the judgment sampling (Marshall, 1996) of candidate school participants that fit the program types being investigated in this case study. This form of sampling is useful for exploratory studies in that it allows for the researcher to use a logical selection of experiment groups that meet the required variables under consideration. However, the act of hand-selecting programs to study may reduce the extent to which the outcome analysis can be generalized (Marshall, 1996).

This format corresponds with the reality of research in this emerging field of PSE programs for individuals with IDs wherein more classically generalizable sampling methods (e.g. random sampling) are not yet practical for the reasons that (1) there is a paucity of subjects available for research, given the recent emergence of such programs and (2) the not unrelated issue that those programs that are further developed have been the target of so much research that many are experiencing research participant burnout. Furthermore, the programs hand selected for research in this case study are selected as representatives of similar types of programs available elsewhere, and thus the study maintains an ability for some intentional, conscious generalization, even if not for broad, systematic generalization.

Conclusion

Graduates of both PSE programs explored in this study demonstrate higher rates of employment in all three time scopes (since high school, in the past two years, and currently) than those in the NLTS-2 comparison group. These gains were substantial in all three surveyed time frames (since high school, in the past two years, and currently).

The findings in the study suggest that the discrepancy between the two programs may be less severe than we expected. In other words, attendance in an employment-focused PSE program may have similar benefits for individuals with IDs, regardless of the degree of integration that the program offers.

There were, however, some distinctions between the two programs that are worth noting in the conclusion.

1. The average hours of employment were higher for the graduates of the specialized program compared to the integrated program.
2. Graduates of the integrated program demonstrated higher levels of employment outside the traditional settings for individuals with IDs (food preparation, production, and janitorial) than those of the specialized program, in which a higher prevalence of traditional placement was observed.
3. Graduates of the integrated program achieved a higher hourly rate than either those of the specialized program or the NLTS-2 national averages.

There may, of course, also be other factors that differentiate the outcomes of graduates from these two program types that were beyond the scope of our inquiry.

In as much as this case study corroborates other studies already completed, there is a growing body of evidence that suggests that PSE programs for individuals with IDs are highly effective as a means to increase employment rates for such individuals. Such data can and should be used to encourage further propagation of PSE programs for individuals with IDs and provides justification for pilot programs of similar kinds in countries wherein PSE programs have not yet been made available for individuals with IDs.

Opportunities for further research

Several opportunities for further research emerged from this investigation. Foremost is the need for more quantitative data regarding employment outcomes for individuals with IDs who attend PSE programs. The limited number of graduates from these programs to date provides a mandatory limitation to the scale of any investigation, but as more case studies and small-scale reports are published, the more the patterns that have begun to emerge can be corroborated and generalized through a future literature review.

The relatively low hours of employment/week also presents a question for further investigation. So far, most of the outcome studies have focused simply on whether graduates of the PSE programs for individuals with IDs are earning paid employment but have not offered much detailed inquiry into the details of that employment. Understanding the conditions that result in the majority of the graduates in this case study working part time would be helpful (e.g. is it because they only wish/need to work part time? Because of the disincentive of losing social security benefits? Because of local economic factors? Do the graduates lack the requisite skill or ability to maintain full-time jobs? Or is there still an employer bias being levied on the graduates because of their disabilities?).

We noted that both of the programs utilized for this case study, as well as the majority of those that we encountered in the early research stages of this report, have tuition rates that are parallel to those of many college and university programs for individuals without disabilities. It would be interesting to explore the socioeconomic status of families who have been able to send their adult children to PSE programs and how these socioeconomic factors may also influence the positive outcomes of graduates. There is also a need for practical research and development of scholarship and grant programs to help fund potential PSE students from *lower* income families who may not be able to pursue PSE options due to prohibitive costs.

Finally, more qualitative and quantitative reports are needed regarding similar PSE programs in other countries outside of North America. Do they exist? If so, how are they developed? Have

participants experienced success? With more international coverage of this phenomenon will come ever greater ability to generalize conclusions.

Acknowledgements

The authors thank Paula Lancaster and Mary Bair of Grand Valley State University for their constructive feedback and insights through the actualization of this study. They additionally wish to thank Meg Grigal and Deb Hart for their contributions and guidance in the early stages and also thank the administrators and graduates who participated in this study; their time and commitment was invaluable.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for profit sectors.

Notes

1. As defined in the “Definition of Terms” section below.
2. Specifically, the National Longitudinal Transition Study 2 (2009).
3. We have modified the terminology for these programs in an attempt to minimize potential unintentional linguistic bias due to the negative connotations of “substantially separate” and contrasting positive connotations of “inclusive, individual support.” Nevertheless, we have maintained the published definition of these terms.
4. This occurs approximately semi-weekly as students attend sporting events, concerts, theater productions, and so on. This is not considered a “formal” program of the specialized school.
5. For example, if 87% of graduates said that they wanted to earn a competitive job, and then 100% reported earning a competitive job, this would be reported as a 115% achievement rate or 100%/87%.

References

- Bronfenbrenner U (1979) *The Ecology of Human Development: Experiments in Nature and Design*. Cambridge: Harvard University Press.
- Bureau of Labor Statistics (2009) *May 2009 National Occupational Employment and Wage Estimates United States*. Available at: http://www.bls.gov/oes/2009/may/oes_nat.htm
- Dempsey I and Ford J (2009) Employment for people with intellectual disability in Australia and the United Kingdom. *Journal of Disability Policy Studies* 19(4): 233–243.
- European Intellectual Disability Research Network (2003) Intellectual disability in Europe. *Working Papers*. Canterbury: Tizard Centre, University of Kent at Canterbury.
- Gaumer AS, Morningstar ME and Clark GM (2004) Status of community-based transition programs: a national database. *Career Development and Transition for Exceptional individuals* 27(2): 131–149.
- Gilmore S, Bose J and Hart D (2001) Postsecondary education as a critical step toward meaningful employment: Vocational rehabilitation’s role. *Research to Practice* 7(4): 1–4.
- Grigal M and Hart D (2010) What’s the point? A reflection about the purpose and outcomes of college for students with intellectual disabilities. *Think College Insight Brief* 2: 1–4.
- Grigal M and Dwyre A (2010) *Employment activities and outcomes of college-based transition programs for students with intellectual disabilities*. Think College Insight Brief, Issue No. 3. Boston: Institute for Community Inclusion, University of Massachusetts.
- Grigal M, Hart D and Weir C (2012a) A survey of postsecondary education programs for students with intellectual disabilities in the United States. *Practice in Intellectual Disabilities* 9(4): 223–233.
- Grigal M, Hart D and Weir C (2012b) *Think College Standards, Quality Indicators, and Benchmarks for Inclusive Higher Education*. Boston: University of Massachusetts Boston, Institute for Community Inclusion.

- Grigal M, Neubert DA and Moon MS (2001) Public school programs for students with significant disabilities in post-secondary settings. *Education and Training in Mental Retardation and Developmental Disabilities* 36(3): 244–254.
- Grigal M, Neubert DA and Moon MS (2002) Postsecondary options for students with significant disabilities. *Teaching Exceptional Children* 35(2): 68–73.
- Hart D and Grigal M (2008) *The New Frontier: Postsecondary Education for Youth with Intellectual Disabilities. Section 504 Compliance Handbook (351)*. Atlanta: Thompson Publishing.
- Hart D, Grigal M and Weir C (2010) Expanding the paradigm: postsecondary education options for individuals with autism spectrum disorder and intellectual disabilities. *Focus on Autism and Other Developmental Disabilities* 25(3): 134–150.
- Hart D, Mele-McCarthy J and Pasternack RH (2004) Community college: a pathway to success for youth with learning, cognitive, and intellectual disabilities in secondary settings. *Focus on Autism and Other Developmental Disabilities* 39(1): 54–66.
- Marshall MN (1996) Sampling for qualitative research. *Family Practice* 13(6): 522–526.
- Migliore A and Butterworth J (2009) Data note: postsecondary education and employment outcomes for youth with intellectual disabilities. *Data Note XXI*. Boston: Institute for Community Inclusion.
- Moon MS and Neubert DA (2006) Postsecondary settings and transition services for students with intellectual disabilities: models and research. *Focus on Exceptional Children* 39(4): 1–8.
- National Center for Special Education Research N (2009) NLTS-2. Available at: http://www.nlts2.org/data_briefs/2002_01.html (accessed 28 December 2013).
- National Council on Disability Report on Subminimum Wage and Supported Employment (2012) National council on disability report on subminimum wage and supported employment. *Ncd.govpublicationsAugust*. Available at: <http://www.ncd.gov/publications/2012/August232012/> (accessed 11 March 2014).
- Neubert DA, Moon MS and Grigal M (2004) Activities of students with significant disabilities receiving services in postsecondary settings. *Education and Training on Developmental Disabilities* 39(1): 16–25.
- NLTS-2 Data Tables. A database from the national longitudinal transition study-2. (2009). Available at: http://www.nlts2.org/data_tables/index.html (accessed 5 December 2013).
- Papay CK and Bambara LM (2011) Postsecondary education for transition-age students with intellectual and other developmental disabilities: a national survey. *Education and Training in Autism and Developmental Disabilities* 49(1): 78–93.
- Smith FA, Grigal M and Sulewski JS (2012) Postsecondary education and employment outcomes for transition-age youth with and without disabilities: a secondary analysis of american community survey data. *Think College Insight Brief* (15): 1–4.
- Thoma C (2012) The state of postsecondary education for persons with intellectual disabilities: what are the perceptions of key stakeholders? *Creative Education* 3(26): 1122–1129.
- Wang Y-T (2013) Are adults with intellectual disabilities socially excluded? An exploratory study in Taiwan. *Journal of Intellectual Disability Research* 57(10): 893–902.
- Wehman P and Yasuda S (2005) The need and the challenges associated with going to college. In: Getzel E and Wehman P (eds) *Going to College*. Baltimore: Paul H. Brookes Publishing, pp. 3–24.
- Zafft C, Hart D and Zimbrich K (2004) College career connection: a matched cohort study of youth with significant disabilities who did and did not participate in postsecondary education. *Education and Training in Developmental Disabilities* 39(1): 45–53.