

A Review of the Literature on Postsecondary Education for Students with Intellectual Disability 2010-2016: Examining the Influence of Federal Funding and Alignment with Research in Disability and Postsecondary Education

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Abstract

Amendments to the Higher Education Opportunity Act (2008), including the creation of the Transition and Postsecondary Program for Students with Intellectual Disabilities (TPSID) model demonstration program, have led to increased opportunities for students with intellectual disability to obtain postsecondary education. The present study builds on previous reviews of the literature on postsecondary education (PSE) for students with intellectual disability (SWID) to provide a review of articles published in peer-reviewed journals between 2010 and 2016. The specific aims were to (a) describe recent research, (b) determine the impact of TPSID funding on peer-reviewed literature, and (c) compare the domains and methodologies used with research on PSE for students with disabilities in general using the Postsecondary Access and Student Success (PASS) taxonomy (Dukes, Madaus, Faggella-Luby, Lombardi, & Gelbar, 2017). Findings are described and implications for research and practice are discussed.

Keywords: postsecondary education, higher education, intellectual disability, college students with disabilities

In recent years, there has been tremendous increase in the opportunities for students with intellectual disability (SWID) to pursue postsecondary education (PSE). Amendments in the Higher Education Opportunity Act (HEOA, 2008) created pathways to federal financial aid for SWID and a new model demonstration program: Transition and Postsecondary Programs for Students with Intellectual Disabilities (TPSID). These initiatives and financial investments brought greater attention to the need for expansion of PSE options for SWID. Subsequently, the prevalence of college and university programs enrolling SWID has grown significantly in a relatively short period of time. Although existing federal higher education datasets do not gather or share program information regarding SWID, a directory of self-reported data from programs is managed and updated by Think College at the University of Massachusetts Boston. This directory shows the number of PSE programs for SWID grew from 148 in 2008 (Grigal, Hart, & Weir, 2012) to 280 as of November 2019 (Think College, 2019), an almost 90% increase in a little over a decade.

The increases in postsecondary options and student enrollment have presented new opportunities for gathering data on student experiences and program outcomes. In particular, the creation of the TPSID programs, and the evaluation activities conducted by the corresponding National Coordinating Center, led to the creation of the first national longitudinal dataset on postsecondary education for students with intellectual disability (PSEID). Funded by the U.S. Department of Education, Office of Postsecondary Education, TPSID grants were awarded to two and four-year colleges and universities to create or expand high quality, inclusive model comprehensive transition and postsecondary education programs for students with intellectual disabilities. The first cohort of 27 grantees in 23 states received five-year awards in 2010 and another cohort of 25 grantees were awarded TPSID grants in 19 states in 2015 (National Coordinating Center Accreditation Workgroup, 2016). The National Coordinating Center for the TPSID model demonstration program was established by Think College at the Institute for Community Inclusion, University of Massachusetts Boston in 2010.

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The development, implementation, and evaluation of the TPSID model demonstration project also led to increased awareness and support for expansion of programs at colleges and universities both within and outside of the TPSID network (Grigal, Hart, Smith, Domin, & Weir, 2016). It also generated increased opportunities for research to be conducted on the provision of inclusive higher education, the perceptions and experiences of various stakeholders, as well as the associated outcomes. This recent surge in research is not evident in previous reviews of the literature on PSEID conducted by Neubert, Moon, Grigal, and Redd in 2001 and by Thoma, Lakin, Carlson, Domzal, Austin, and Boyd in 2011.

Neubert et al. (2001) examined peer-reviewed literature from 1966 to 2000 locating 27 published articles, of which 23 were specific to the U.S. The majority were program descriptions or position papers advocating for the inclusion of individuals with intellectual disability in postsecondary education. The authors identified a trend from more segregated programs on college campuses in the 1970s and 1980s with little opportunity for integration with typical college peers to an increased focus in the 1990s on inclusion in college classes and the emergence of dual enrollment for SWID in their last few years of high school. Limited empirical research was found and shared. In 2011, Thoma et al. provided an updated review of literature published between 2001 to 2010. The authors located 24 peer-reviewed articles in the U.S. (this review also included dissertations). Similar to Neubert et al., findings, the majority of articles were program descriptions, although greater program specific details were provided including program development strategies. Other studies identified national trends or explored the perspectives of students, parents, faculty, and program developers. In both literature reviews, the authors pointed to a large number of questions to be examined in future research and called for research on the outcomes of SWID attending PSE as well as identification of “what works” to prepare college SWID for successful outcomes.

Since the publication of these literature reviews, there have been substantial contributions to the peer-reviewed literature on PSEID, in large part due to the guidance and investments resulting from the reauthorization of the HEOA (2008) and the advent of the TPSID model demonstration program. Though the TPSID model demonstration program was not characterized as a research initiative, it was charged with establishing an evidence-base for PSE practices. As such, many articles on PSEID have been published in peer-reviewed literature since the inception of the TPSID program. An updated literature review reflect-

ing these recent contributions is needed to ascertain if, and how, the expansion of PSEID services after 2010, and funding provided by the TPSID program have impacted the nature of existing PSEID research.

Another recent development in the field of PSE research is an effort to develop a taxonomy to organize and examine the extant research on students with disabilities in higher education writ large. The Postsecondary Access and Student Success (PASS) taxonomy for PSE and students with disabilities (Dukes, Madaus, Faggella-Luby, Lombardi, & Gelbar, 2017) was developed through extensive literature mapping and expert input. The taxonomy has a four-domain structure with corresponding subdomains. After developing this taxonomy and corresponding subdomains, Madaus et al. (2016) used it to analyze 1036 articles published on PSE for students with disabilities (PSED) between 1980-2012 to ascertain which domain and subdomain they ascribed. These researchers found 97.8% of the articles reviewed fit into the taxonomy. However, it should be noted articles about non-matriculated students were omitted from the sample. This could indicate much of the research on PSEID was not included in this review as SWID are not typically matriculating in PSE.

Given the new level of program availability and research activity, as well as an emerging research classification structure, an updated literature review reflecting these recent contributions was conducted to include all peer-reviewed literature (including research, program, and policy) since 2010. The scope of the review aligned with the commencement of the TPSID model demonstration program and its completion in 2016, at the end of the no-cost extension year for the TPSID grantees funded in the first cohort. The review had three specific purposes:

1. Describe peer-reviewed literature on PSEID from 2010 to 2016 reflecting on the journals in which work was published, the settings examined, the purposes stated, and the specific methodologies (participants, data collection, design) used.
2. Determine the impact of federal funding via the TPSID and other programs on peer-reviewed literature on PSEID.
3. Compare the domains and methodologies used in peer-reviewed literature on PSEID with those present in literature on PSED using the PASS taxonomy for PSE and students with disabilities (Dukes et al., 2017) to determine similarities and differences in these fields of research.

Method

We conducted a search of online databases Academic Search Premier and ERIC using combinations of the search terms: (1) intellectual, developmental, cognitive, significant, or severe disability or disabilities or mental retardation; and (2) college, university, or postsecondary or higher education. To be included in the review, articles needed to be (1) published in a peer-reviewed journal between 2010 and 2016, (2) focus on students with ID or ID plus other disabilities, and (3) focus on higher education or dual enrollment (a practice used to support high school students with intellectual disability typically between the ages of 18-22 to access college as a transition experience during their final years of special education services). Articles were excluded if they (1) were published prior to 2010 ($n = 36$) or after 2016 ($n = 21$ to date); (2) were published in a format other than a peer-reviewed journal, for example dissertations ($n = 20$ since 2010), books or book chapters ($n = 3$ since 2010), or other non-peer-reviewed source ($n = 92$ since 2010); (3) conducted an intervention study with college SWID as a convenient sample but did not focus on any aspect specific to including SWID in PSE ($n = 13$ since 2010); (4) were a descriptive article that mentioned PSE for SWID but these students were not a primary focus of the article ($n = 2$ since 2010); or (5) conducted an analysis of secondary data with results that included PSEID but SWID were not a primary focus of the analysis ($n = 1$ since 2010). The final sample consisted of 60 articles.

Coding of the articles began with development of a data collection form and initial pilot of the form by the authors using five articles. The authors coded articles independently and then compared the results. Categories were added, and wording edited to ensure clarity and consistency in coding. Once the data collection form was finalized, the first author coded each of the articles and then interrater agreement was conducted by both authors on 30% of the articles. Disagreements were resolved through discussion between the two authors, resulting in 100% agreement. Articles were coded on more than 40 variables grouped by the three purposes of the review. Data were collected using an online form through Google Forms developed for the present study. Records were downloaded and analyzed in Microsoft Excel.

For purpose one, descriptive information including the year, authors, journal, and purpose was coded for all articles. Program characteristics were coded for any article that provided a program description. These characteristics consisted of the name, location, and type of college or university; type of students served;

program length; and program components (inclusive academic coursework, specialized coursework, employment opportunities, housing, and credential). Locations were grouped together using the U.S. Census Bureau Regions (West, Midwest, Northeast, and South). For articles that conducted a research study (all articles that collected original data as well as two additional studies that analyzed secondary data), research methods including the sample, data collection methods, and design were coded.

For purpose two, any funding that supported the research study or program was coded. TPSID funding was determined as funding received by the U.S. Department of Education, Office of Postsecondary Education. Author affiliations were coded and compared with a list of TPSID Cohort One grantees on the Think College website (see <https://thinkcollege.net/tpsid>).

For purpose three, the PASS taxonomy (Dukes et al., 2017) was used to code the domain and subdomain of each article. This taxonomy addresses the following four domains and corresponding subdomains: student-focused support, program and institutional-focused support, faculty and staff-focused support, and concept and systems development (see Table 4 for domain descriptions and corresponding subdomains). To allow further comparison with the broader literature base on PSE for students with disabilities, articles were coded as containing original or nonoriginal data as well as the type of methodology used, with the same coding definitions as those provided by Madaus et al. (2016). Original data was defined as survey, measurement, evaluation, observational, or interview data. Both secondary analysis of larger datasets as well as simple program descriptions were not considered original data. If the article collected original data, the methodology used was coded as descriptive quantitative, qualitative, mixed methods, group design, or single subject design.

Results

Purpose One: Describe Published Articles

Journal. Table 1 displays the number of articles in each of the journals in which articles were published. Of the 60 peer-reviewed articles, the greatest number were published in the *Journal of Postsecondary Education and Disability* ($n = 11$, 18.3%), followed by the *Journal of Policy and Practice in Intellectual Disabilities* ($n = 7$, 11.7%), the *Journal of Vocational Rehabilitation* ($n = 5$, 8.3%), and *Inclusion* ($n = 4$, 6.7%). A substantial number ($n = 16$, 26.7%) were published in journals other than those listed in Table 1 (see note).

Setting. Components of higher education programs were described in 35 articles. The majority of all programs described were at four-year (82.9%) and public (62.9%) IHEs. Programs located in the south were described in the highest number of articles (60%, vs. Midwest 22.9%, West 8.6%, and Northeast 5.7%). The most frequently stated program length was two years (40%). The program name was stated in slightly less than half of all articles (45.7%). In terms of the type of students served (adult vs. high school), 8.6% of articles stated the program served dually enrolled students, 14.2% served only adults, and 8.6% served both; this information was missing in more than two-thirds of articles (68.6%). In terms of program components, 77.1% stated the program included inclusive academics, 31.4% stated the program included specialized coursework, 57.1% stated the program included employment opportunities, 40% stated the program provided housing, and 31.4% stated the program offered a credential. Only five articles (14.3%) provided a description of the program that addressed all five of these components. Only two articles (5.7%) described all of the above program variables that were coded.

Purpose. The stated purpose of each article was coded, and common purposes were grouped together in categories (see Table 2). The most frequent purposes were to evaluate the perspectives of stakeholders ($n = 22$) or describe a particular PSE program for SWID ($n = 14$).

Methods. In addition to the 40 studies that collected original data, two studies analyzed only secondary data. Therefore, methods for 42 research studies were coded. Secondary data sources were analyzed in four studies altogether and consisted of the NLTS2 dataset, the RSA-911 dataset, the National Core Indicators Adult Consumer Survey (NCI ACS), and existing student journals from a class. In surveys of the characteristics of PSE programs ($n = 8$), the Think College database was used to identify sites in 7 (87.5%) studies.

The most frequent type of participant was SWID ($n = 20$), followed by program staff ($n = 10$), students with other disabilities ($n = 10$), and students without disabilities (i.e., typical college population; $n = 9$). Of the studies that included SWID as participants, 10 studies had a sample size of between one and 10 students. Four studies had a sample size of 11-20 SWID and an additional two studies had a sample size in this range but did not specify how many of the participants had intellectual disability. Three studies had larger sample sizes ($n = 21$, Moore & Schelling, 2015; $n = 125$, Ross, Marcel, Williams, & Carlson, 2013; and $n = 17,478$, Grigal, Migliore, & Hart, 2014). The

remaining study did not specify the number of participants with intellectual disability. Of the 20 studies that included SWID as participants, 10 included students with other disabilities (not including peer mentors/tutors) in the sample. These included students with ASD ($n = 6$), students with disabilities other than ID or ASD ($n = 3$ studies), and students with intellectual or developmental disabilities (i.e., the number with intellectual disability was not specifically stated, $n = 1$). Across the 20 studies that included SWID as participants, 15 collected data while students were enrolled in postsecondary education, 4 studies collected data after students exited postsecondary education, and 1 study collected data when individuals exited the VR system. Only one study reported on the outcomes of students who attended PSE across multiple sites (two sites; Moore & Schelling, 2015).

Data collection methods and design are shown in Table 3. The most frequently used data collection method was a survey or questionnaire ($n = 26$; 61.9% of research studies). Description of quantitative data was the most common design ($n = 28$; 66.7% of research studies), although a substantial number of research studies used qualitative design ($n = 17$; 40.5%).

Purpose Two: Determine Impact of Federal Funding on Research

Twenty-five articles reported a funding source (41.7%). Six articles reported more than one funding source, for a total of 32 funding sources. The most frequent source of funding was the U.S. Department of Education, Office of Postsecondary Education ($n = 14$). Studies were also funded by the U.S. Department of Health and Human Services, Administration on Intellectual and Developmental Disabilities ($n = 5$); the National Institute on Disability and Rehabilitation Research ($n = 4$); the U.S. Department of Education with no office specified ($n = 2$); as well as other sources including foundation funds ($n = 7$). The majority of funding sources were federal funds (27 of the 32 funding sources). To further evaluate the impact of TPSID funds, the affiliations of authors were compared to the list of TPSID Cohort One sites. For 41 studies (67.2%), at least one author was affiliated with a site that received TPSID Cohort One funds.

Purpose Three: Compare PSEID and PSED Research

Across the 60 articles in the review, most articles were in the domains of program and institutional-focused support ($n = 23$, 37.7%) or student-focused support ($n = 17$, 27.9%). Fewer articles were in the domains of faculty and staff-focused support ($n = 2$, 3.3%), and concept and systems development ($n = 9$,

14.8%). See Table 4 for the number of articles coded in each subdomain. Ten articles did not fit in any domain (16.4%). Of all articles included in the review, 40 (66.7%) presented original data and 20 (33.3%) did not present original data. The methodologies used were: descriptive quantitative ($n = 22$, 55%), qualitative ($n = 10$, 25%), mixed methods ($n = 5$, 12.5%), and single subject ($n = 3$, 7.5%).

Program and institutional-focused support domain. More than one third of the articles ($n = 23$) were in the program and institutional support domain. Within this domain, most articles ($n = 13$) fit within the “general or specific descriptions of disability programs or components” subdomain. These articles included both descriptions of a particular program for SWID (e.g., Kelley & Westling, 2013; Rogan, Updike, Chesterfield, & Savage, 2014) as well as descriptions of programs nationwide with information gathered through a survey (e.g., Grigal et al., 2012; Papay & Bambara, 2011). Other articles in this domain focused on program development (e.g., Papay & Griffin, 2013; Plotner & Marshall, 2015); experiences, perceptions, knowledge, attitudes, or beliefs of peer mentors (e.g., Culnane, Eisenman, & Murphy, 2016); program evaluation (e.g., Lynch & Getzel, 2013; Ryan, 2014); and institutional policies/procedures (e.g., Westling, Kelley, & Prohn, 2016). Of the 23 articles in this domain, only 13 analyzed original data, indicating a high degree of general descriptive articles in this domain.

Student-focused support domain. Within the student-focused support domain, all articles either collected original data or conducted a secondary analysis of existing data, indicating a strong focus on data-based articles within this domain. Almost half of the articles ($n = 7$) were in the “experiences, perceptions, knowledge, attitudes, or beliefs of students with disabilities” subdomain. Five of these articles were qualitative studies of the experiences or perceptions of SWID and the remaining two articles used descriptive quantitative methods. Three articles in this domain fit in the “post-undergraduate program experiences and/or outcomes” subdomain (Butler, Sheppard-Jones, Whaley, Harrison, & Osness, 2016; Moore & Schelling, 2015; Ross et al., 2013). Although sample sizes were small for all three studies, SWID who attended PSE were reported to experience favorable outcomes in terms of employment, health, and independent living.

Two studies fit into the subdomain of “learning/using study skills, learning strategies.” These were intervention studies that taught note-taking skills (Reed, Hallett, & Rimel, 2016) and collateral academic skills (Chezan, Drasgow, & Marshall, 2012),

both with positive findings. The remaining five articles did not fit into any subdomain. These were a study on the development and use of a social network instrument (Eisenman, Farley-Ripple, Culnane, & Freedman, 2013), an intervention for teaching requesting and using accommodations (Mazzotti, Kelley, & Coco, 2015), an intervention for supporting task engagement and social interactions in internships (Gilson & Carter, 2016), a qualitative study of students’ perspectives on self-determination (Ankeny & Lehmann, 2011), and vocational rehabilitation (VR) data on the participation of SWID in higher education (Grigal et al., 2014).

Faculty and staff-focused support. Only two articles aligned with the faculty and staff focused support domain and both addressed the “faculty knowledge, attitudes, and beliefs” subdomain. Gibbons, Cihak, Mynatt, and Wilhoit, (2015) and Jones, Harrison, Harp, and Sheppard-Jones (2016) both conducted surveys at single institutions of higher education in the southeastern U.S. and collected original data. Gibbons et al. surveyed university faculty and students about their beliefs related to PSEID and autism. Results highlight a willingness to embrace these programs but with faculty showing greater concerns about the effects in the classroom and the potential negative impact on peers. Faculty participants indicated more uncertainty about inclusion of SWID than did students. Jones et al. found faculty who had experience with PSEID perceived both personal and professional growth for students and instructors, including academic gains, social gains, and personal gains. Identified barriers included the challenges of academic rigor and issues related to communication.

Concept and systems development. Nine articles fit into the concept and systems develop domain. Two ascribed to the evaluation metrics and methods subdomain; Grigal, Dwyre, Emmett, and Emmett (2012) focused on the development of an evaluation tool for dual enrollment PSE programs and McEathron, Beuhring, Maynard, and Mavis (2013) focused on developing a taxonomy for PSE programs. A single article, Hosp, Hensley, Huddie and Ford (2014) aligned with the subdomain of assessment instruments. This study determined the criterion-related validity for using curriculum-based measurement for PSE for students with ID. The majority of the articles ($n = 6$) were in the subdomain “conceptual models or discussion of issues in disability services” and did not present original data.

Discussion

Describing Recent PSEID Research

Legislation and subsequent federal funding in recent years have led to increased opportunities for individuals with intellectual disability to obtain post-secondary education. This increase in program development and access have been paralleled in a growing body of research. From 2010 to 2016, there were 60 articles published in peer-reviewed journals, an average of 8.6 studies per year. In comparison, 24 articles (including dissertations) were included in a decade long review (2001-2010) conducted by Thoma et al. (2011), an average of 2.4 studies per year. Although this 150% increase is striking, the average number of studies still does not come close to paralleling the number of studies published in the literature on PSED which averaged 61.5 per year over the most recent period reviewed (2007-2012; Madaus et al., 2016). Therefore, research on PSE for SWID constitutes a growing, but still relatively small, portion of all research on PSE for students with disabilities.

Articles in the present review were distributed across 28 journals, suggesting this type of research has more than one “home.” A similar finding was reported by Madaus et al. (2016) in their review of literature on PSE for students with disabilities in general. Madaus et al. state the breadth of journals in which research is published:

presents both challenges and opportunities for higher education. It is at first a challenge as the breadth of journals may obfuscate critical trends in higher education and disability by scattering related findings about common problems across multiple constituencies. Further, the breadth of journals means that there are no common research guidelines applied consistently throughout the research literature, thus weakening the ability to cogently inform the field of new and critical findings. Yet there is also opportunity, as the literature clearly reflects multidisciplinary interest, thus providing a broader lens to examine important topics. (p. 7)

These comments on the challenge and opportunity certainly apply to research on PSEID as well. Of particular note is the majority of journals in which articles were published were disability- or special education-focused and few studies were published in higher education-focused journals. Greater attention to and inclusion of studies on PSEID in higher education literature would offer an audience of higher education researchers an opportunity to learn about

the nature, structure and outcomes of these programs. It may also lead members of the higher education community to reflect on how the inclusion of students with ID in their respective colleges and universities might impact their future research and practice. However, the lack of publications in mainstream higher education journals may not reflect a lack of interest or effort on the part of researchers. It is possible that disability-focused research is not as welcomed or successful in getting published in higher education journals due to decisions made by editorial staff or review determinations made by field editors. If these individuals do not value research on students with disabilities or feel it would not be of interest to their readership, then more than likely studies focusing on disability issues will likely remain unpublished in higher education journals.

Determining Impact of TPSID Funding

The present review found an increase in the volume of articles published in peer-reviewed journals since TPSID funding began in 2010. The review also found a substantial number of articles – two thirds – had at least one author who was affiliated with a site that received TPSID Cohort One funding. The TPSID program also seemed to influence the region in which the preponderance of the research was conducted, the southeastern region of the US. Twenty-one (60%) of the studies reviewed were conducted in the south. The Midwest produced 23%, while the northeast and western states both offered less than 10%. These figures ascribe to the receipt of TPSID grants – one third of the TPSID Cohort One grantees were located in the southern region – and states such as North Carolina, Tennessee, South Carolina and Georgia have strong regional coordination.

Additionally, the most frequently cited funding source was the U.S. Department of Education, Office of Postsecondary Education, the source of TPSID funding. It is clear the TPSID model demonstration program, either directly through increased staffing or indirectly through increased attention or desire to seek evidence-based practice, has benefitted the field of PSEID in terms of research as well as practice.

Comparing PSEID Research to PSED

In the review conducted by Madaus et al. (2016) of literature on PSE for students with disabilities, 42.4% of articles were student-focused support, 29% were program and institutional-focused support, 13.4% were faculty and staff-focused support, and 13.3% were concept and systems development. The present review found in the recent body of research on PSEID, there are more studies on program and

institutional-level support (37.7%) and fewer on student-focused support (27.9%) than PSED literature. One potential explanation for the greater attention given to programs and institutions in the literature on PSEID is this newly developed field required a paradigm shift for SWID to obtain postsecondary education, necessitating descriptions of programs and guidance on program development.

Another potential explanation is the higher percentage of research on student-focused support in the Madaus et al. (2016) review is because this domain includes the practice of accessing the disability services office. Students with disabilities access this office as their primary means of obtaining academic accommodations or needed supports for course or campus access, therefore it is logical that there is a strong emphasis on this practice in PSED research. However, students with ID have not utilized the disability services office as consistently as have other students with other disability (Grigal et al., 2016). And while the leading professional organization for disability support professionals, the Association of Higher Education and Disability (AHEAD) has offered guidance about how disability services offices should serve students with ID (Thompson, Weir, & Ashmore, 2011), it is incumbent on disability services office personnel to educate themselves about their role in supporting programs and providing services to SWID.

PSEID outliers from the PASS taxonomy. There were 10 articles (16.4%) on PSEID that did not fit into the existing PASS taxonomy. The bulk of these reflected perspectives of stakeholders may not be as prevalent in research in higher education on students with other kinds of disability. Supports for college SWID may stem from peers, from their school system (if dually enrolled), and from parents or adult service providers. The complex nature of the support systems involved with college access for SWID may be the reason a number of articles did not fit the PASS taxonomy. SWID, even those attending college, may still be more reliant on their parents than other college students with or without disability. They may also be involved with other agencies due to needed supports or benefits associated with their disability such as VR, Social Security, or Medicaid. The 10 articles that did not fit into one of the four domains primarily focused on perspectives of stakeholder groups including adult service providers (Sheppard-Jones, Kleinberg, Druckemiller, & Ray, 2015), parent/family members (Griffin, McMillan, & Hodapp, 2010; Martinez, Conroy, & Cerreto, 2012); college students (Griffin, Summer, McMillan, Day, & Hodapp, 2012; Izzo & Shuman, 2013; May, 2012; & Westling, Kelley, Cain, & Prohn, 2013).

The remaining two articles focused on statewide development (Mock & Love, 2012; Smith & Benito 2013). The emergent nature of the field of inclusive higher education and the need for policy development and alignment of the aforementioned state and local systems also may be a more disability-specific dynamic associated with college SWID.

It could be as PSE options expand and access to existing supports via disability services offices become more prevalent for students with ID, the proportion of research in higher education that focuses on student supports may grow. However, the exclusion of literature reflective of issues relevant to the ID population such as peer supports, adult service provider roles, and family needs is worth considering as the PASS taxonomy is refined. Future modifications should ensure the taxonomy addresses research on all students with disability, including research on stakeholder groups specific to SWID. This may help to prevent exclusion of important studies from the canon of PSE literature on disability. However, for the purposes of this study there was enough similarity in the two bodies of literature that the PASS taxonomy could be applied to more than 80% of the articles.

Research base similarities. There were similar percentages of studies in the present review that used original data compared to the Madaus et al. (2016) review. Two-thirds of the present studies used original data compared to approximately 60% of the articles reviewed by Madaus et al. Further, there was a very high degree of similarity in methodologies used compared to literature reviewed by Madaus et al. The methodologies of studies in the review by Madaus et al. were: descriptive quantitative 55%, qualitative 29%, mixed methods 10.1%, and group or single subject 6%. This could be interpreted as an encouraging finding, suggesting methodologies used in studies on PSEID parallel those used in studies on PSED. However, both fields of study demonstrate a need for more rigorous empirical studies. Without this, “the field may be at risk of disseminating and potentially endorsing myths of practice that are at best ineffective and at worst, harmful for students” (Madaus et al., 2016, p. 9).

Limitations

As with any literature review, the present review has a number of limitations. First, it is possible studies were missed in the keyword search. Within this particular field, there have been many terms used to describe PSE (e.g., postsecondary education, higher education, college/university, inclusive higher education, dual enrollment transition program, etc.) as well

as many terms used to describe SWID (including intellectual and developmental disabilities, cognitive disabilities, significant disabilities, severe disabilities, etc.).

Second, it is likely more studies from TPSID Cohort One than those identified in this review will be published, given the length of time it takes to prepare and publish research findings. Therefore, it is possible studies supported by TPSID Cohort One funding were missed by the timeframe for this review.

Third, the information provided in published articles is not sufficient to determine whether authors were directly associated with TPSID funds. It is possible authors may have been at sites that received TPSID funding but the authors themselves were unconnected with the TPSID grant.

Fourth, the present review excluded 20 dissertation studies published between 2010 and 2016. Anecdotally, we noticed many of the dissertation studies employed more rigorous quantitative and qualitative methodologies than articles published in peer-reviewed journals. The findings of dissertation studies will be examined in a future review, although we encourage the authors of these valuable dissertation studies to publish their findings in peer-reviewed journals in order to reach a wider audience.

Fifth, 13 studies were excluded that examined the impact of an intervention with postsecondary SWID but did not specifically focus on access or success in postsecondary education. These studies used either single subject or group research designs with small numbers of participants to study interventions for academic skills such as reading comprehension or vocabulary acquisition or the use of assistive technology for skills such as navigation or time management and specifically stated that the purpose of the study was to examine the impact of the intervention. Such studies were excluded to ensure the studies reviewed focused on access to PSEID and studies that involved SWID as a sample of convenience to examine the impact of an intervention were excluded. However, research examining the impact of an intervention with SWID in PSE does appear to be a growing area of research. Future reviews should take a closer look at these studies and make recommendations regarding the participation of postsecondary SWID in research.

Sixth, Madaus et al. (2016) reviewed studies from 1955 to 2012 and the most recent period available for comparison with the present studies was 2007 to 2012. Further, the review by Madaus et al. (2016) also included studies from outside of the U.S. A comparison of studies during the same time period as those selected for this review (2010 to 2016) and only in the U.S. could have yielded slightly different findings.

Finally, we did not attempt to code the results of studies due to the high degree of variability in purpose, participants, and methods. Therefore, a review of the findings of recent research remains to be conducted. Despite these limitations, the present review has many implications for research and practice.

Implications for Research

A primary implication of this review is the need for more empirical research documenting the outcomes of SWID in PSE, involving greater numbers of SWID across multiple sites. Results from outcome studies may improve our knowledge of the efficacy of certain PSEID practices, and the impact on various types of outcomes including employment, independent living, social networks, and fiscal independence. Longitudinal follow up studies could reflect important changes in graduate outcomes over time, as the impact of college experiences are not always immediate. Only four studies in the review reported data after students exited PSE and only one study reported on the outcomes of students who attended PSE across multiple sites. Studies that included SWID as participants had relatively small sample sizes – half of these studies had a sample size of 10 students or fewer and only three studies had greater than 20 participants with ID.

Unlike the previous reviews by Neubert et al. and Thoma et al., the current review benefited from a field far more developed in terms of legislative guidance and level of implementation. Although the quantity of publications has expanded, the nature of its content is not substantially dissimilar to the literature examined in 2011 by Thoma et al.

Research on PSEID has, for many years now, been describing “what is” and must now progress to exploring “what works”, and then “what works with whom.” Despite numerous calls for research on outcomes and the impact of PSE practices on outcomes for students with intellectual disability (Grigal, Hart, & Weir, 2013; Neubert et al., 2001; Thoma et al., 2011), the field has been slow to engage in this research. This could be due to a lack of funding for research in PSEID, and in particular funding for the collection of data for program completers. Outcome data on students who attended TPSID programs funded between 2010-2015 was not required by the federal office funding the program. Further, the collection of these data was prohibited from being included in the reporting protocol implemented by the National Coordinating Center (Grigal et al., 2016). Thus, outcome data from the over 2,200 students served by this program were not captured during the 2010-2015 funding cycle. It is critical future research examine student outcome data.

Second, there is a need for better descriptions of program context in future published journal articles. There is a high degree of variability in the models used to support SWID to access PSE as well as variability in the types of students served. The practices used in one context may not be as effective in another. Therefore, it is essential for researchers to provide a description of the broader program in which research is situated, not just the immediate setting in which a research study occurs. We suggest, at a minimum, program descriptions contain:

- type and location of institution,
- name of program (unless anonymity is a concern),
- length of program,
- type of students served, and
- basic program components (i.e., the presence or absence of inclusive classes, specialized classes, employment opportunities, housing, and credential).

In terms of describing student participants, we recommend researchers describe the disabilities of participants, including how many students had ID, had autism (but not an ID) or autism and an ID, as well as any particular criteria used for admitting students into the PSE program (e.g., academic skills, functional abilities, safety or life skills, self-determination, etc.). This will allow practitioners to understand the sample of participants in a research study and potentially determine the level of comparability to their own context.

Additionally, while it clearly had an impact on the field, the TPSID model demonstration program did not include a focus on peer-reviewed research. Funding from the U.S. Department of Education, Office of Special Education and the Institute of Education Sciences has been so instrumental in developing evidence-based practices in special education is limited to K-12 educational practices, as is the research conducted by the Office of Innovation Improvement. Therefore, the grants funded by these entities may eliminate the potential for funding research on SWID in higher education. In order for the field to progress beyond its current state, federal funding entities that support research addressing issues associated with the adult lives of individuals with ID such as the Rehabilitative Services Administration, National Institute on Disability, Independent Living, and Rehabilitation Research, and the Administration on Intellectual and Developmental Disabilities could address the issue of higher education in future research priorities and provide opportunities for research funding encouraging examination of evidence-based practice.

Consideration of the alignment of research on PSEID with the broader research on PSED must also continue. Future revisions to the PASS taxonomy (Dukes et al., 2017) could include examination of the few studies to which this taxonomy could not be applied, to consider adding or revising domain and subdomain descriptions to be inclusive of all research on PSEID. To the greatest extent possible, efforts to develop and implement research guidelines on PSE for students with disabilities should be coordinated with research specific to PSEID to prevent the latter developing as a “specialized” field and permit inclusion in all aspects of higher education, including the identification of evidence-based practice.

Finally, although the present review found TPSID programs have a strong presence in the published literature, there is a need to hear from voices other than those at TPSIDs. TPSIDs represent only a fraction of all PSE programs for SWID and operate under conditions not typical of most other programs – a greater level of funding, ability to staff programs, and, in some cases, no tuition charged to students. In programs where there is not this level of funding, or when funding goes away, there is a need to report on practices used and outcomes achieved by graduates. TPSIDs funded during 2010-2015 are in a unique position to do this and could contribute greatly to the literature by doing so.

Implications for Practice

In addition to future research, the present review has a number of implications for practitioners, bearing in mind practitioners in inclusive higher education may include higher education faculty, staff and administration as well as local educational agency (LEA) education and transition personnel and administration. One clear implication is the number of higher education options continues to grow, and the TPSID model demonstration program has created many new opportunities for SWID to access colleges and universities. Secondary and higher educators should capitalize on these new resources, visiting programs when possible and exploring the manner in which they structure services, staffing, and supports for SWID. The present review reflects a deep pool of practice from which those interested in developing further inclusive higher education practices can draw upon and build.

Second, it is incumbent upon those in higher education and in partnerships with LEAs working with SWID to ensure programs create structures to capture student outcomes. Without this information, the field, and those researching it, will continue to have difficulty assessing the long-term impact college course

access, college employment and career development, and campus membership ultimately have on students' lives. Until the issue of outcomes is part and parcel of all higher education experiences, the field will continue to grapple with questions about efficacy and cost benefit. Any program serving SWID should have a mechanism to capture and update student and family contact information and, at a minimum, gather information about employment and education engagement one year after exit.

Finally, just as researchers must continue to reach out to the higher education community to share what they are learning, practitioners must do so also. Outreach to the administrative leadership within their respective colleges or university as well as with other state and regional IHEs will build understanding and foster further development activities. Just as we should seek to avoid research on PSEID being seen as separate field of study, so too should we want to avoid PSEID to be seen as only a disability issue in colleges and universities. This can be accomplished by brokering partnerships with other higher education initiatives such as those focused on diversity and equity issues.

Conclusion

Opportunities for PSE for SWID have expanded greatly in recent years, and this growth has been reflected in the published literature. An uptick in the rate of publications was found between 2010 and 2016 and articles were located across many journals. Parallels between literature on PSE for SWID and for students with disabilities in general exist in terms of the domains studied and the methodologies used. As a field, we should be proud of what has been accomplished in a relatively short period of time. We have demonstrated students with intellectual disability are able to access postsecondary education, faculty are able to accommodate these students in their classes, and the perspectives of everyone do change when these students are included in the campus community. It is time now to devote our energies and resources to the next most important issues: determining the impact of PSE on employment and other outcomes and identifying which practices have the greatest evidence for supporting students with intellectual disability who enroll in PSE in achieving their desired goals.

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Table 1

Number of Articles by Journal

Journal	<i>n</i>	%
Journal of Postsecondary Education and Disability	11	18.3%
Journal of Policy and Practice in Intellectual Disabilities	7	11.7%
Journal of Vocational Rehabilitation	5	8.3%
Inclusion	4	6.7%
Education and Training in Autism and Developmental Disabilities	3	5.0%
Focus on Autism and Other Developmental Disabilities	2	3.3%
Career Development for Exceptional Individuals	2	3.3%
Teaching Exceptional Children	2	3.3%
Remedial and Special Education	2	3.3%
Journal of Intellectual Disabilities	2	3.3%
Intellectual and Developmental Disabilities	2	3.3%
Journal of Autism and Developmental Disorders	2	3.3%
Other ^a	16	26.7%

Note. ^a Journals in which one article was published. These were: *Northwestern Journal of International Human Rights*, *Research and Practice for Persons with Severe Disabilities*, *Rehabilitation Counseling Bulletin*, *The Journal of Special Education*, *International Journal of Whole Schooling*, *All Ireland Journal of Teaching and Learning in Higher Education*, *Psychology in the Schools*, *Education and Treatment of Children*, *Canadian Journal of Action Research*, *Exceptionality*, *Rural Special Education Quarterly*, *College Student Journal*, *The Journal of College and University Student Housing*, *DADD Online Journal Research to Practice*, *Journal of College Access*, and *Journal of Disability Policy Studies*.

Table 2

Purposes of Articles

Purpose	<i>n</i>
Evaluate the perspectives of stakeholders	22
Describe a particular postsecondary education program for students with intellectual disability	14
Provide guidance on how to develop or implement a program	8
Describe postsecondary education for students with intellectual disability in general or described an issue within the field	7
Describe the characteristics of programs for students with intellectual disability	6
Evaluate the impact of an intervention for students attending a program	4
Evaluate one aspect or component of a program for students with intellectual disability	3
Describe a statewide approach to creating access to postsecondary education	3
Provide outcome data on students who attended a program	2
Other	7
Total	76 ^a

Note. ^a 16 studies had more than one stated purpose

Table 3

Data Collection Method and Design

Data collection method ^a	<i>n</i>	%
Survey or questionnaire	26	61.9%
Interviews	8	19.0%
Observation	6	14.3%
Record review	4	9.5%
Secondary analysis of data	4	9.5%
Student documents	4	9.5%
Focus groups	3	7.1%
Direct measurement	3	7.1%
Student narratives/images	2	4.8%
Anecdotal notes	2	4.8%
Other	2	4.8%
Design ^a	<i>n</i>	%
Description of quantitative data	28	66.7%
Qualitative	17	40.5%
Correlational	4	9.5%
Single subject	3	7.1%
Participatory action research (PAR)	2	4.8%
Case study	1	2.4%

Note. *N* = 42 articles involved analysis of original or secondary data.

^aPercentages total more than 100% as some studies used more than one data collection method and/or design.

Table 4

Domain Descriptions and Subdomains

Domain	<i>n</i>	Domain description ^a	Subdomains	<i>n</i>
Student-focused support	17	Articles describe experiences and/or perceptions of students with disabilities in and after higher education.	Experiences, perceptions, knowledge, attitudes, or beliefs of students with disabilities	7
			Post-undergraduate program experiences and/or outcomes	3
			Learning/using study skills, learning strategies	2
			Requesting or using accommodations	1
			Self-determination skills	1
			Statistics on students with disabilities	1
			Career development	1
			Profiles of students	1
Program and institutional-focused support	23	Articles describe service provision by the disability services office in a higher education institution ^c . They can also relate to institutional policies and procedures pertaining to students with disabilities.	General or specific descriptions of disability programs or components	13
			Program development	4
			Experiences, perceptions, knowledge, attitudes, or beliefs of disability service providers	3
			Program evaluation	2
			Institutional policies/procedures	1
Faculty and staff-focused support	2	Articles describe knowledge, attitudes, and beliefs of faculty and non-disability services personnel to enhance access to higher education for students with disabilities. They can also relate to education or support for faculty and staff in this practice.	Faculty knowledge, attitudes and beliefs	2

Continued

Concept and systems development	9	Articles describe development, evaluation, or validation of a variable including development/ validation of assessment instruments, evaluation metrics, theoretical models of service delivery, standards of practice, or ethics. The variable must be under proposal, in development, or being used in practice to gather empirical evidence.	Conceptual models or discussion of issues in disability services	6
			Evaluation metrics or methods	2
			Assessment instruments	1
No fit	10	Articles meet criteria for inclusion, but do not meet criteria for domains.		
Total	61 ^b			

Notes. ^aMadaus et al. (2016). ^bOne study met the criteria for two domains. ^cStudies involving peer mentors were coded in this category.