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THE ROLE OF THE SCHOOL PSYCHOLOGIST IN POSTSECONDARY EDUCATION: ENHANCING TRANSITION PLANNING, COLLEGE RETENTION, AND GRADUATION OUTCOMES

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The Role of the School Psychologist in Postsecondary Education: Enhancing Transition Planning, College Retention, and Graduation Outcomes

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The first edition on the role of school psychologists in postsecondary education reviewed a variety of initiatives for providing psychoeducational supports to postsecondary students. Additionally, the issue highlighted the diverse roles some school psychologists currently provide in college and university settings. This edition further explores the role of school psychology in postsecondary education by addressing transition planning during high school and innovations to improve college retention and graduation outcomes, especially for vulnerable students.

Over time, college enrollment within four years following high school graduation for students with disabilities have increased from 26.3% in 1990 to 45.6% in 2005 (Newman, Wagner, Cameto, & Knokey, 2010). Additionally, strides have been achieved toward increasing enrollment and supporting the needs of first-generation, low-income, and minority students over the past several decades (Engle & Tinto, 2011; Kim, 2001; Opp, 2001). Although commendable, there is still a need to continue improving enrollment rates and graduation outcomes for these students as their enrollment and completion rates continue to remain below that of other student groups. Additionally, the time to degree and types of degrees acquired may stifle some long-term opportunities (Engle & Tinto, 2011). The discipline of school psychology requires training in differential instruction, universal design, and well-being strategies for addressing supports for all students equitably, thus has the potential to offer valuable expertise in addressing this endeavor.

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Consistent with the aim of expanding the role of school psychology to serve all students, including college students, this special issue includes articles that offer applied strategies for enhancing transition planning, fosters a thought-provoking discussion on inclusive paradigms for college students with intellectual disabilities, reviews support for first-generation students, and shares findings from a cross discipline study informing postsecondary teacher consultation roles. It is our hope that the articles in this special issue expand the literature on best practices in transition supports and inspires school psychology faculty to explore sharing their pedagogy expertise within their institutions to inform teaching and processes across disciplines that support college-wide student success.

The first three articles in this edition offer insights on transition planning. Hengen and Weaver, the authors of "Post-Secondary Students with Disabilities: Increasing Self-Advocacy Through Educational Plan Participation" provide an insightful review of national data on graduation rates for individuals with disabilities. Their comparison of these data to outcome data for students without disabilities offers compelling evidence for the need to address transition planning supports for students with disabilities. The authors discuss the implications of requirements for self-disclosure to access college support services and the importance of self-advocacy skills in this process. As noted by IDEA (2004) high school students' participation in their own Individualized Education Plans (IEP) and Section 504 meetings is recommended. However, the premise that participation improves a student's awareness, understanding and perhaps self-advocacy through this process has not been widely tested. In their study, Henegen and Weaver explore this hypothesis by comparing self-advocacy ratings of college students with disabilities who had the benefit of IEP/Section 504 participation and those who did not. Findings support student participation in high school disability meetings as a mechanism for fostering self-advocacy.

The second featured article, entitled: "Students with Disabilities and Postsecondary Education: A Service Brief for School Psychologists by Morales and Sanetti proposes that transition planning within schools should be a collaborative effort. They note the need for school psychologists to contribute an integral role in this process alongside teachers, families, and other-related service personnel. The authors also offer a broad understanding of postsecondary transition planning that includes vocational routes to educational training and adult education forums in addition to college and university options. The framework for transition planning recommendations hinges on three skill domains including academics, life skills, and autonomy (i.e., self-determination, self-advocacy). In their detailed review of indicators for best practices, the authors remind readers of the important of considering a wide range of postsecondary options including preparatory and boarding schools as well as rehabilitation training. Additionally, a quick-reference resource table of the evidence-base for their recommendations is provided.

In the third article, Tyre and colleagues, share 20 years of innovation in transition planning acquired through the Center for Change in Transition Services in Washington State. They delineated federal transition planning law and requirements, review the benefits of student and family involvement in the process, and also discuss barriers to transition planning. Similar to the discussion by Morales and Sanetti, the authors frame transition planning with a broad context that includes adult education services, employment, and community participation. The article also advocates for early planning prior to high school, noting that particularly for students with disabilities it may take additional time to foster independent learning strategies and self-advocacy. Assistive technology options are also discussed as a key component to include in transition plans as well as discussion with students and parents as they approach postsecondary education.

Although consistent in their advocacy for best practices in transition planning, the first three articles in this issue also offer unique perspectives across authors that can serve to enhance the effectiveness of school psychologists in this role. School psychologists have long held the belief that transition planning is important to supporting students; however, some studies also indicate that they would like more involvement in this process (Lillenstein, Levinson, Sylvester, & Brady, 2006; Talapatra, 2014). Barriers to that involvement may include time, high caseloads, and training. Although the articles in this issue do not address caseload, the very specific and applied nature of their recommendations can offer school psychologists a number of prescribed and efficient strategies that may ease time and training restraints.

The fourth article in this issue titled "Facilitating Inclusive Postsecondary Education: A School Psychology Perspective" by Roberts and Roach, addresses supportive innovations for students with intellectual disabilities (ID) in postsecondary education. The authors advocate for an inclusive perspective to college and university access as well as consideration for technical schools and certification programs. They review the benefits to individuals including studies that indicate enhanced employment options, higher income, greater independence, and overall personal life satisfaction for these individuals. Additionally, a review of U. S. Department of Education funded Transition and Postsecondary Programs for Students with Intellectual Disabilities is provided. Findings indicate these initiatives by colleges have resulted in individuals acquiring 2-year and 4-year degrees as well as certifications specific to career entry. Lastly, a list for transition and self-determination resources is included.

The next article, "Best Practices for Supporting Upward Economic and Social Mobility for First-Generation College Students' by Styck shares a plethora of data on the status of college prerequisite coursework preparation, college enrollment rates, and degree attainment for first-generation students. The author advocates for multi-faceted supports that include school-based and parent strategies to enhance college success. Strategies include encouraging students to take more rigorous classes in high school (e.g., math) to prepare for college entrance, early transition planning, coaching parents and students on how to navigate university systems, and increasing awareness of available college supports. Additionally, the impact of self-confidence, the belief in one's own ability to achieve, and added psychological stressors of low income circumstances are acknowledged. This discussion also reminds school psychology that research indicates first-generation and non-first-generation students who complete postsecondary degrees have comparable career entry and salary outcomes.

The final article in this series, authored by Scott and colleagues and titled, "An Unconventional Collaboration at the College Level to Improve STEM Student Success," provides an example of a college collaboration to improve postsecondary outcomes. More specifically, the authors review research initiatives between a multi-disciplinary team of college faculty, including school psychology, that enhanced outcomes for biology students. The collaboration follows a school consultation model similar to K-12 teacher consultation but applies those principles to the college classroom. School psychology students provide classroom observations and school psychology faculty consult on active learning techniques as well as instruction delivery methods beyond traditional lecture format. The authors note that university faculty across disciplines have considerable content expertise but often are not provided training in pedagogy through their graduate studies. Thus, school psychology faculty have an opportunity to collaborate on these issues. Importantly, the article also notes that some courses within postsecondary institutions are perceived as "weed-out" classes to identify the most capable students. This paradigm is problematic given many capable students who could succeed and contribute, with appropriate instructional structures, are neglected. Lastly, the authors' perspective that first-generation and

historically marginalized students may be put at-risk is consistent with the voice of advocacy throughout this issue that calls for greater access for all students and the role school psychology may serve in this noble effort.

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Post-Secondary Students with Disabilities: Increasing Self-Advocacy Through Educational Plan Participation

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Self-advocacy, a critical skill for effective communication, negotiation, and for individual assertion of interests, desires, needs, and rights, is especially important for people with disabilities. People with disabilities must have an accurate understanding of their abilities and rights, and be able to speak up in an appropriate manner when they need assistance or when their rights are violated. Because family members and teachers often advocate for students with disabilities, these individuals may or may not independently acquire the self-advocacy skills they need for later in life. This study explored the self-advocacy skills of post-secondary students with disabilities enrolled at a Midwestern metropolitan university and investigated the relationship between self-advocacy in this setting and the level of prior participation in educational planning (IEP or 504 Plan) meetings before college.

Educational Plans at the Primary and Secondary Levels

Students who have been identified as having an educational disability under the Individuals with Disabilities Education Act (IDEA, 2004) are provided with an Individualized Education Program (IEP). IEPs are student-centered plans that contain a description of the student's functional and academic performance, appropriate accommodations, modifications, and services, as well as social, daily living, and/or academic goals. Each IEP is developed by a team of adults (parents, special education teacher, general education teacher, etc.) who are to help guide the student through their education, and to assist in the transition to post-secondary settings. According to IDEA, students 14 years of age should be invited to their IEP meetings and should be active participants when appropriate (IDEA, 2004).

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Under Section 504 of the Rehabilitation Act of 1973, students are eligible for accommodations if their disability significantly limits at least one major life activity (Rehabilitation Act; 1973). Examples include, but are not limited to, seeing, hearing, eating, sleeping, standing, bending, lifting, caring for oneself, etc. (Jacob, Decker, & Hartshorne, 2011). Because eligibility for 504 Plans is much broader than for special education, students with 504 Plans may be eligible to receive accommodations that they would not have been able to receive under IDEA. Unlike IEP Teams, there is no legal mandate for who should serve on the team that develops the 504 Plan. Group members may consist of the student, parent, school principal or certified staff, 504 Coordinator, and/or superintendent. While it is suggested that students who are at a developmentally and age appropriate level are involved in their 504 Plan meetings (Children First Advocacy, 2011), there is no legal mandate.

While no research was found in which student benefits from 504 Plan meeting involvement was investigated, previous research has shown a number of benefits associated with active student membership of IEP team meetings. Such students are more likely to achieve their academic goals, are more motivated, and demonstrate higher levels of engagement and leadership (Barnard-Brak & Lechtenberger, 2010). These students are also more likely to practice self-determination skills and have a better understanding of the IEP process as a whole (Test & Neale, 2004). Despite these benefits, there are indications that a third of transition-age students (16 years or older) are not invited to their IEP team meetings (Williams & O'Leary, 2001). Of those who do attend their meetings, Field, Sarver, and Shaw (2003) assert that because parents and teachers generally advocate for the students, the students themselves are often not required to learn or practice self-advocacy skills. However, because IDEA does not apply to students after graduation, it is critical that students with disabilities learn to self-advocate if they are to succeed in post-secondary settings.

Post-Secondary Students with Disabilities

As overall high school graduation rates have climbed, there remains a gap between individuals with and without disabilities. While high school graduation rates for general education students exceeds 85% in most states, the gap between students with and without disabilities ranges from 15 to 30 points (DePaoli, Fox, Ingram, Maushard, Bridgeland, & Balfanz, 2015). Similarly, while the overall number of students enrolled in post-secondary education continues to climb, there remains a gap for students with disabilities (Getzel & Thoma, 2008). While over 40% of general education students will enroll in a 4-year college within eight years of graduation, fewer than 19% of students with disabilities will do so (Newman et al., 2011). As a result, the Bureau of Labor Statistics (2015) reports that 35% of people without disabilities have obtained their Bachelor's degree compared to 16% of people with disabilities.

One major challenge for students with disabilities at the post-secondary level is ensuring access to appropriate accommodations (Newman et al., 2011). At the primary and secondary levels, students receive these supports by law through IEPs and 504 Plans that are largely developed by adults. However, at the post-secondary level, students are required to self-identify and request supports independently (Getzel & Thoma, 2008). Unfortunately, there are indications that many of these students do not seek the proper services, supports, and accommodations to address their academic needs, as they either consider themselves to no longer have a disability or they choose not to disclose their disability (Getzel, 2014).

There are also other challenges. When students begin college, many are leaving their families who often serve as the primary social support system (Ramsdell, 2014). For all students transitioning to post-secondary settings, there are many changes that can make social functioning difficult. The students who are successful in transitioning to college are more

likely to find new social support networks (Robbins et al., 2004). However, students with disabilities may be at a greater social disadvantage. They may have poor adaptation skills and struggle more with social tasks. These students may also be less likely to self-identify as having a disability due to fear of discrimination (Adams & Proctor, 2010).

Self-Advocacy

As the enrollment of youth with disabilities in post-secondary education has increased, the lack of self-identification is concerning. It is estimated that only 40 percent of such students have informed their attending institutions of their disabilities (Wagner, Newman, Cameto, Garza, & Levine, 2005). This disconnect may be due in part to a lack of self-advocacy skills, defined as "an individual's ability to effectively communicate, convey, negotiate, or assert his or her own interests, desires, needs, and rights" (Van Reusen, Bos, Schumaker, & Deshler, 1994, p. 1). For the purpose of this study, based on the conceptual framework developed by Test, Fowler, Wood, Brewer, and Eddy (2005), self-advocacy is a broad skill set that includes the domains of knowledge of self, knowledge of one's rights, communication skills, and leadership skills.

Based on this framework, knowledge of self and knowledge of rights are described as two skills that must be established before one can self-advocate (Test et al., 2005). The knowledge of self is the ability to understand one's strengths, preferences, goals, interests, learning style, support needs, characteristics of one's disability, and responsibilities. Knowledge of rights includes an understanding of personal, community, and educational rights, as well as steps to redress violations, steps to advocate for change, and knowledge of resources.

Once knowledge of self and knowledge of rights are established, the ability to communicate is essential for effective self-advocacy (Test et al., 2005). Important components of communication include assertiveness, negotiation, articulation, use of assistive technology, listening, persuasion, and compromise. The final component of self-advocacy is the development of a group-advocacy leadership role (Test et al., 2005). Leadership skills include learning the rights of the group, advocating for others, political action, and organizational participation. In a leadership role, students must be able to understand others' perspectives of how the disability affects them and effectively communicate those perspectives to others. This is important when one wishes to advocate for another individual or for change within the group.

Despite the noted importance of self-advocacy, very few scales have been developed to measure this construct for individuals with disabilities, and none for students at the post-secondary level. One of the few that has been developed is the Self-Advocacy Measure for Youth (SAMY; Adams, 2015). This measure was developed and validated for elementary students with Attention-Deficit/Hyperactivity Disorder (ADHD). It was developed as a criterion-referenced, 5-point response scale based on the framework of Test and colleagues (2005), on which caregivers are asked to report on the specific self-advocacy skills of their elementary-aged students.

Current Study

It is reasonable to assume that students who are able to practice self-advocacy skills in IEP Team or 504 Plan meetings may be more likely to sustain and generalize self-advocacy skills. However, the empirical research in this area is lacking. While several studies have found that students with disabilities can be taught to effectively self-advocate during the IEP Team meeting, there have been no studies demonstrating a link between team meeting participation and self-advocacy skills outside of the meeting (Martin et al., 2006; Test & Neale, 2004).

The purpose of this study was to investigate the potential relationship between student participation in educational plan (IEP and 504) meetings at the

primary/secondary level and self-advocacy at the post-secondary level. It was hypothesized that post-secondary students with disabilities who had been active participants in their IEP/504 Plan meetings would be more likely to self-advocate than those who were less involved.

Method

Setting and Participants

This study was conducted at a metropolitan university in the Midwest with an enrollment of approximately 15,000 students. Although 87% of students are residents of the state, there are over 115 countries represented on campus. A majority of students are Caucasian (72%), followed by Hispanic/ Latino, African American, Asian, American Indian, and Pacific Islander. At the time of the study, there were 865 students registered with the Disability Services Office at the university. Students who were under the age of 19 were excluded from the study due to the age of majority in the state being 19. Thus, the population of this study included 771 undergraduate and graduate students who were registered with the Disability Services Office during the 2016 spring semester. Of these, 150 students participated in the study for a response rate of 19.5%.

In order to register with the Disability Services Office, students must have a disability or diagnosis, provided medical or educational documentation of the disability/diagnosis, and attended an interactive intake meeting in order to receive accommodations. Examples of diagnoses include, but are not limited to: visually impaired, hard of hearing, learning disability, mobility disability, psychological disability, health or medical disability, attention deficit hyperactivity disorder (ADHD), etc.

Measures

A self-report survey was developed for this study, which included demographic information such as gender, age, ethnicity, and class standing. In addition, students were asked questions about disability type, accommodations accessed through the Disability Services Office, and other services they receive on campus.

Adapted Self-Advocacy Measure for Youth (SAMY). As a measure of students' current perceived self-advocacy skills, the survey included an adapted version of the Self-Advocacy Measure for Youth (SAMY). The original measure included a number of statements regarding the student's ability to demonstrate specific self-advocacy skills (Adams, 2015). Parents or caregivers used a 5-point Likert response scale to rate the student's independence on each skill (1 = *Not at all*, 2 = *partially or inconsistently given assistance or prompting*, 3 = *partially or is beginning to complete the task inconsistently, without assistance*, 4 = *mostly; most of the time completes task independently*, and 5 = *mastery; consistently engages in the task independently*). As the SAMY is based on the framework of Test and colleagues (2005), it measures the child's skills in four areas: knowledge of self, knowledge of rights, communication skills, and leadership skills. Adams (2015) reported high internal consistency (Cronbach's alpha = .93) and test-retest reliability ($r = .865$, $p < .01$) for the total scale of the SAMY.

With permission from the developer, the SAMY was adapted for students at the post-secondary level as a self-report rating scale (see Appendix). The same self-advocacy skills were referred to in each item; however, statements were changed to first person language (e.g., "I can describe the characteristics of my diagnosis/disability") and the Likert scale was changed (1 = *strongly disagree* to 5 = *strongly agree*). As with the original SAMY, subscales of knowledge of self, knowledge of rights, communication skills, and leadership skills are added together for a total scale score of self-advocacy.

The adapted SAMY demonstrated high internal consistency (Cronbach's alpha = .94), with all of the items positively, significantly correlated. As seen in

Table 2, there were also high Cronbach's alpha reliabilities for each subscale (Cronbach's α = .87, .85, .89, and .83 respectively). Evidence of validity was gathered by analyzing the relationship between the overall adapted SAMY composite score and a survey item regarding students' use of services and accommodations. Responses on the item "I use my accommodation plan at the university" were ranked on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). As seen in Table 2, the correlation between the composite score and this item was moderate (α = .45, p < .001).

IEP/ 504 involvement. The final part of the survey focused on identification and services received prior to reaching the post-secondary level. Participants who reported having an IEP or 504 Plan were asked additional questions regarding their attendance and participation in team meetings.

Procedures

With approval from the university's Institutional Review Board (IRB), the survey was distributed and administered through *Qualtrics*, a web-based platform used to create and distribute surveys and generate reports. Students registered with the Disability Services Office who were age 19 and older at the time of the study received an email from the office asking them to consider completing the survey. The email explained that the survey was voluntary and that participation was not required in order to receive accommodations from the Disability Services Office. The survey was open for four weeks, and reminder emails were sent at one-week intervals.

Results

Of the 150 participants, 55 percent (n = 82) indicated that they had been diagnosed with their disability while still in elementary or secondary school. Of these participants, 29 reported having an IEP, 7 reported having a 504 Plan, 27 reported having neither, and the remaining participants stated that they didn't know or couldn't remember if they had a plan.

To test the hypothesis that students who were active participants in their IEP/504 Plan meetings would be more likely to self-advocate than those who were less involved, an independent samples t-test was conducted. The two groups were based on responses to the survey item, "How involved were you in your IEP or 504 Plan meetings?" This question utilized a 5-point scale, with higher scores indicating a greater level of involvement. In addition to the scaled responses, "I am not sure / I do not remember" was provided to the participants as a non-scaled option.

Those who reported that "I never attended my meetings," "I attended my meetings but the meetings were run by adults," or "I attended, but only voiced opinions when necessary," were placed into one group (n = 25). Those who reported that "I attended my meetings and voiced my opinions often" or "I attended and ran my meetings" were placed in the other group (n = 4). There was a significant difference in the adapted SAMY scores of students who were active members in their IEP/504 Plan meetings (M=4.46, SD=.28) and students who did not attend their meetings (M=3.98, SD=.80); t(13.06)= -2.23, p = .04. Thus, the hypothesis was supported.

Discussion

As was hypothesized, post-secondary students who were active members of their IEP/504 plan team meetings demonstrated higher self-advocacy scores than students who were not active members or did not attend their meetings. Interestingly, nearly a quarter of the participants (23%) who reported they were diagnosed with a disability before 12th-grade did not know or remember whether they had an educational plan at the primary/secondary level. Perhaps this should not be surprising, as a large percentage of students are not invited to their IEP/504 Plan meetings

(Williams & O'Leary, 2001). Furthermore, nearly one-third of those participants (32.9%) who were diagnosed with a disability before 12th-grade reported that they had no educational plan at all. There are several possible explanations for this. Some students may not have had an IEP because their disability was not found to have an impact on their educational performance. It is also possible that some students who may have been eligible for a 504 Plan did not received one due to their school staff's misunderstanding of the law.

Of the participants who reported diagnosis of a disability before the 12th grade, 43.9% reported having an IEP/504 Plan prior to college. For these students, there was a significant difference in SAMY scores between those who were active team members and those who were not. Based on these findings, a strong case can be made that students who are able to practice self-advocacy skills within the "safety net" of an IEP or 504 Plan meeting are better prepared to self-advocate at the college level. It would be in these meetings that students could practice the four components of self-advocacy: knowledge of self, knowledge of rights, communication skills, and leadership skills.

Limitations

There are several limitations of this study that should be mentioned. Although the sample largely matched the population of the university, lack of diversity is an issue. Additionally, because all participants were from only one institution, we cannot be sure that these results would generalize to other post-secondary settings. Another limitation to the study is that some students with disabilities may have difficulties with self-report assessments. Some individuals may have rated themselves more positively or negatively than appropriate, which may not reflect true self-advocacy skills. Furthermore, although participants were notified that the survey would be completely anonymous, there may have been a tendency to provide socially desirable responses. Finally, the correlation noted in the study does not demonstrate causation.

Implications for School Psychologists

Domain Four of the NASP Practice Model states that school psychologists provide "interventions and mental health services to develop social and life skills" (NASP, 2010, p. 5). The results of this study would suggest that learning and practicing self-advocacy skills at educational planning (IEP or 504 Plan) meetings can benefit students beyond the meeting and into the post-secondary years. As with any skill, the longer one is able to practice self-advocacy skills within a safe setting, the better those skills can develop. Based on an assessment of self-advocacy skills, educators may need to teach students about their disability, their rights and responsibilities, effective communication skills, leadership skills, and teamwork skills. Education plan meetings may be an appropriate place for students to practice these skills.

Despite IDEA's mandate that students 14 years of age should be invited and participate in their IEP meetings when appropriate, the findings of this study demonstrate that a majority of students in the sample were not active participants in their educational plan meetings. School psychologists and educators are encouraged to invite students with IEPs and 504 Plans to their annual meetings and to encourage them to be active participants in the development of their educational plans. These meetings would be a good place for parents and educators to allow students to practice their self-advocacy skills and allow them to discuss their diagnosis, impacts of the diagnosis both at home and at school, educational plans, rights as a person with a disability, and appropriate accommodations and modifications. As students attend these meetings and are actively involved in conversations that impact their education, these skills should continue to grow.

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Appendix

Adapted SAMY

Knowledge of Self

1. I can name my diagnosis/disability.
   - Strongly disagree
   - Somewhat disagree
   - Neither agree nor disagree
   - Somewhat agree
   - Strongly agree

2. I can describe the characteristics of my diagnosis/disability.
   - Strongly disagree
   - Somewhat disagree
   - Neither agree nor disagree
   - Somewhat agree
   - Strongly agree

3. I can describe several challenges or experiences related to the characteristics (symptoms) of the diagnosis/disability.
   - Strongly disagree
   - Somewhat disagree
   - Neither agree nor disagree
   - Somewhat agree
   - Strongly agree

4. I can describe a strategy that someone else can do to help with a challenge of my diagnosis/disability (e.g., an accommodation that a professor can make, a way a peer could help, etc.).
   - Strongly disagree
   - Somewhat disagree
   - Neither agree nor disagree
   - Somewhat agree
   - Strongly agree

5. I can describe a strategy that I can do to help myself with a challenge of my diagnosis/disability (e.g., use a planner to track assignments).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

6. I have long term academic goals and know how to describe them.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

7. I know and can describe my personal strengths to help reach my goals.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Knowledge of Rights

8. I know and can explain the reason that I have an accommodation plan at UNO.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

9. I know several of my accommodations listed on my accommodation plan at UNO.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

10. I know when accommodations should be used to help me access classes and/or assignments.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

11. I helped to develop my accommodation plan at UNO (e.g., I requested accommodations that I thought would help me be successful).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

12. I know how to take the proper steps in order to change my current accommodation plan at UNO.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

13. I know what to do if my accommodation plan were to be violated at UNO (e.g., if the professor wouldn't allow a certain accommodation plan in his/her classroom).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Communication Skills

14. I know when it is appropriate to tell my professor, boss, or supervisor about my disability/diagnosis.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

15. I can request accommodations and supports from my professors, boss, and/or supervisor with appropriate assertiveness (i.e., in a polite and confident manner).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

16. I know when it is appropriate to tell my peers, friends, or classmates about my diagnosis/disability.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

17. I can listen to and demonstrate understanding of another person's opinion in a conversation (e.g., by reflecting or restating the other person's view in my own words).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

18. I can problem solve with my professor, boss, and/or supervisor using negotiation and compromise.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

19. I can problem solve with my peers, friends, and/or classmates using negotiation and compromise.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Leadership Skills

20. I know that others have similar diagnoses/disabilities as me.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

21. I try to help others understand the general characteristics of this diagnosis/disability (i.e., I try to explain the typical characteristics that anyone with the diagnosis may have, not just the characteristics/symptoms that I have).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

22. I try to help others understand the needs of people with this diagnosis/disability (i.e., I try to explain the typical needs that anyone with this diagnosis can have, not just the needs that I have).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

23. I can ask for changes to be made on behalf of the overall group of people with the same diagnosis/ disability as me (e.g., asking for greater accessibility for all students in wheelchairs).
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

24. I can lead others to work together to meet the needs of people with this diagnosis/disability.
- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

TABLE 1: PARTICIPANTS CHARACTERISTICS

Characteristics	Frequency	Percent
Gender		
Male	56	37%
Female	87	58%
No Response	7	5%
Age		
19 – 21	42	28%
22 – 24	24	16%
25 – 27	19	13%
28 – 30	12	8%
31 – 33	8	5%
34 – 36	3	2%
37 – 39	5	3%
40 and over	21	14%
Ethnicity		
White/Caucasian	97	65%
Black/African American	14	9%
Hispanic/Latino	12	8%
No Response	4	2%
Other	10	7%
Asian	8	5%
American Indian/Alaskan Native	4	3%
Native Hawaiian/Pacific Islander	1	1%
Class Standing		
Freshman	8	5%
Sophomore	27	18%
Junior	43	29%
Senior	42	28%
Graduate Student	24	16%
No Response	6	4%

TABLE 2: ADAPTED SAMY

Means, Standard Deviations, and Correlations for SAMY Subscales and Reported Use of Service

	M	*SD*	1	2	3	4	5	6
1. Knowledge of Self	4.18	0.93	-0.87					
2. Knowledge of Rights	4.01	0.94	.62*	-0.85				
3. Communication Skills	4.02	0.95	.51*	.58*	-0.89			
4. Leadership Skills	3.89	0.90	.43*	.51*	.56*	-0.83		
5. Use of Services	4.16	1.18	.34*	.44*	.36*	0.39	-	
6. SAMY Composite	4.05	0.75	.83*	.83*	.82*	.73*	.45*	-0.94

Note. n = 145. Internal consistency estimates for SAMY subscales shown on diagonal in parentheses.

**p <.05.*

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Students with Disabilities and Postsecondary Education: A Service Brief for School Psychologists

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The transition from secondary education and special education services to postsecondary educational or vocational avenues can be a difficult one for students with disabilities. Advances in the fields of special education, transition services, postsecondary disability services, and higher education have ushered students with disabilities onto college campuses. In recent years, much attention has been given to the provision and quality control of transition and support services that facilitate student-centered post high school opportunities. Facilitating appropriate educational and vocational routes for students with disabilities should be viewed as a conjoint effort across educational and related professionals, including school psychologists. This article reviews quality indicators of transition planning and the role of school psychologists who wish to promote, understand, and support students with disabilities therein.

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Over the past 40 years, federal special education legislation has evolved to include an increasing number of provisions, such as the least restrictive environment mandate within the Individuals with Disabilities Education Improvement Act (IDEA; 2004), to assure that students with disabilities can participate in competitive and college preparatory coursework (Brinckerhoff, McGuire, & Shaw, 2002; Madaus, Jiarong, & Ruben, 2008). Despite these advances, students with disabilities face hardships assimilating to college life upon arrival and face additional challenges when they leave college (Brinckerhoff et al., 2002; Izzo & Bauer, 2015). According to Izzo and Bauer (2015), a large gap exists between students with disabilities and their nondisabled peers in enrollment and persistence in postsecondary education, as well as in post-college aptitude.

Within the literature, persistence in postsecondary education for students with disabilities is discrepant (Wessel, Jones, Markle, & Westfall, 2009). In fact, in a 2009 study, students with disabilities did not differ from students without disabilities, in regard to graduation rates (Wessel et al., 2009). However, students with disabilities (described as both apparent and non-apparent disabilities in this particular study) differed from students without disabilities in regard to the time it took to complete a traditional baccalaureate degree (Wessel et al., 2009). Students with non-apparent disabilities, as described by Wessel and colleagues, include those with learning disabilities whereas students with apparent disabilities include those with chronic health or physical disabilities. Wessel at el. (2009) attribute these discrepancies in degree completion time to the differences in the college experience for students with and without disabilities. For example, students with disabilities may take a lower number of credit hours, or have several semesters in which they do not maintain full-time academic status (Wessel et al., 2009). These are salient considerations for educators, although students with disabilities may take longer to graduate college, this population is still attending college, and persisting until they complete degree requirements even if completion time is longer than that of their nondisabled peers. As such, at a growing rate, students with disabilities are attending postsecondary educational institutions.

Postsecondary education is described as a vital conduit to gainful employment post-college (Madaus et al., 2008). Yet, the harsh reality remains that despite attending college, students with disabilities are often not ready to meet the demands of full time employment (Madaus, Grigal, & Hughes, 2014). As a result, employment opportunities with competitive wages are limited for students with disabilities, particularly for students with learning and emotional-behavioral disabilities (Rojewski, Lee, & Gregg, 2013). For students with disabilities to successfully enroll and persist in postsecondary education and subsequently obtain a job with competitive wages, a team of K-12 educators must carefully attend to planning and delivering comprehensive secondary transition services. This team is responsible for developing transition services to facilitate a wide range of outcomes including preparing students with disabilities for postsecondary education, employment, and independent living through teaching prerequisite academic, life, and self-determination skills (Gartin & Murdick, 2005; Trainor, Morningstar, & Murray, 2016). At times, this team has been led by transition coordinators/specialists and/or secondary special education teachers, however, school psychologists are uniquely qualified to contribute to the development and evaluation of comprehensive transition services aligned with best practice guidelines (Wilczenski, Cook & Regal, 2016).

The Role of the School Psychologist in Transition Planning

School psychologists have expertise in (a) legal aspects of education; (b) academic, social, emotional, behavioral, and life skills assessment and intervention; (c) data-based decision making; and (d) collaborating and consulting across systems and settings (National Association of School Psychologists, 2010). Further, school psychologists are dedicated to (a) promoting social justice; (b) providing equitable and evidence-based services to students; and, (c) involving students in intervention planning, as appropriate (Wilczenski et al., 2016; National Association of School

Psychologists, 2010). As such, school psychologists are uniquely suited to participate in the process of transition to postsecondary education for students with disabilities. The purpose of this manuscript is to provide an overview of (a) the legal requirements of transition planning; (b) components of comprehensive transition planning for postsecondary education, highlighting unique roles for school psychologists; (c) opportunities for additional training in transition planning for postsecondary education; and (d) best practice recommendations that school psychologists can utilize during transition planning for students with disabilities whose goals include postsecondary education.

Legal Requirements of Transition Planning

Per the IDEA (2004), public schools must begin transition planning as a component of a student's Individualized Education Program (IEP) no later than the student's 16th birthday. Traditional transition planning begins with age-appropriate transition assessments to identify measurable postsecondary goals (Trainor et al., 2016). Transition preference assessments should occur throughout a student's secondary years, and include a combination of indicators such as the student's interests, feelings, social world, choices, health issues, and family member roles (Lohrmann-O'Rourke & Gomez, 2011). The results of these assessments should be used to inform postsecondary goals, ensuring a truly student-centered process as mandated in IDEA (2004; Trainor et al., 2016).

The importance of transition planning being student-centered from the beginning of the process is highlighted by the fact that students with disabilities, per IDEA (2004), can receive special education services through their public high school until age 21. However, during this time, students reach the age of majority, which is 18 years of age in 49 of the 50 states (19 years of age in Alabama). When a student with a disability, who has the cognitive capacity to make informed decisions, reaches the age of majority, educational decision making rights are transferred from the student's legal guardians to the student (National Center on Secondary Education and Transition, 2002; students with low incidence disabilities who may not possess the cognitive capacity to make informed decisions may have a parent, legal guardian, or an advocate appointed per state policies). As such, high-stakes legal special education decisions, such as consent for reevaluation and consent for change in educational placement, are made by the student from 18 to 21 years of age (National Center on Secondary Education and Transition, 2002). The age of majority can be very exciting and empowering for high school students; however, negative outcomes of student driven decision-making could include dropping out of high school or accepting an alternate diploma in lieu of receiving valuable transition services (National Center on Secondary Education and Transition, 2002). Such decisions may set up students with disabilities for additional challenges (e.g., fewer employment options, lower income, non-developed soft-skills in social and vocational arenas) in adulthood. As such, it is important that (a) student preferences inform IEP development and transition planning prior to the age of majority so that students perceive it as relevant and beneficial and (b) students are taught about the IEP process and how to effectively contribute to it (see Autonomy, self-determination, and self-advocacy section below).

Although an IEP informed by student preferences is not a guarantee that a student will attain their postsecondary goals (Lombardi, Doren, Gau, & Lindstrom, 2013), it can provide structure in their educational programming and transition planning necessary to ensure that the student receives equitable services in preparation for postsecondary education (Doren, Gau, & Lindstrom, 2012). For such equitable services to be developed and delivered, it is essential for IEP team members, including the school psychologist, to plan for appropriate postsecondary preparation across domains (academics; life skills; autonomy, self-determination, and self-advocacy) and across time (initial phases and setting expectations, final phases and college search, changes to education entitlement). Each of these areas is described next followed by a summary of recommendations for professional development and best practices.

Comprehensive Transition Planning

Preparation Across Domains

Three skill domains have been found to be predictors of college success for students with disabilities: (a) academics; (b) life skills; and (c) autonomy, self-determination, and self-advocacy. Each of these areas is described below.

Academics. Students with disabilities who plan to participate in postsecondary education should be involved in the general education curriculum. Data from the National Longitudinal Transition Study-2 (NLTS2) revealed that students with disabilities who participate in general education instruction in both math and language arts are more likely to proceed to postsecondary education as compared to peers receiving entirely special education instruction (Doren et al., 2012). Although historically transition services focused more heavily on life skills, contemporary transition curricula have shifted toward involving students in more academic content (Browder, Spooner, Wakeman, Trela, & Baker, 2006). In addition to participation in the general education curriculum, students whose transition goals include postsecondary education, also need access to related services, in particular academic skills counseling, necessary for them to reasonably meet their goals. Such academic counseling services may take place during a student's study hall or in a strategy-based/supported study special education course, and might include development and practice with learning strategies in note taking (e.g. Cornell Notetaking), time management (e.g. Pomodoro Technique), organization (e.g. use of a planner), study skills (e.g. flashcards and mnemonics), critically reading a syllabus, and more. These basic academic skills are the foundations for college success.

Students with disabilities should be participating in classes that will reasonably prepare them for college-level work, and further provide exposure to academic content areas relating to what they plan to study in college. For example, a student planning to apply to a four-year college to major in business should be participating in high school curricula such as work-study, college-preparatory mathematics, personal finance, social skills, and computer skills. If a student's present level of performance does not align with the necessary course of study to obtain mastery of postsecondary goals, then the transition plan must be revised to include attainable and realistic goals and corresponding coursework. Grade point average is another predictor of postsecondary educational success; as such students with disabilities who are receiving failing grades need to be monitored closely (Trainor et al., 2016).

School psychologists can use their training in Response to Intervention, prevention, and data-based decision making to closely monitor the academic progress of students with disabilities (Wilczenski et al., 2016). Many school psychologists are already familiar with the process of monitoring school, grade, and class-wide academic data. Arguably it behooves school psychologists to give individual attention to student academic progress, especially for students in transition preparing for postsecondary education, as secondary academic performance can serve as a future performance indicator. Additionally, school psychologists can use their background in consultative models (Wilczenski et al., 2016) to consult with other educators to develop the most practical and goal-centered high school student schedules. For example, school psychologists can advocate for students with disabilities regarding elective classes. Many students with disabilities receive special education "pull out" services during schedule blocks used for elective classes like home economics, child development, and personal finance courses. These elective credits can be extremely valuable to students with and without disabilities, so it is important that students in transition are given access to these courses as appropriate.

Life skills. Students with disabilities often have difficulties communicating effectively with others, and are at risk for being socially isolated due to their differences (Parritz & Troy, 2014). In a nationally representative sample of college students with disabilities, 77% reported feeling left out of things and 63% reported feeling misunderstood (Balfe & Tantam 2010). Developing social networks and social contacts facilitates the developing independence of young adults with disabilities; without these networks, students with disabilities on the college campus can

feel isolated (Esbensen, Bishop, Seltzer, Greenberg, & Taylor, 2010). Some students with disabilities elect to not participate in a desired activity or function due to perceived inability or deficits in prerequisite social skills (Coyne & Fullerton, 2016). One way to prevent these social challenges during college is to provide life and social skills instruction during high school. Evaluations of promising social skills programs have demonstrated that young adults with disabilities who receive both social and vocational skill interventions in high school have significantly fewer symptoms of anxiety and depression and have improved post-college employment opportunities (Hillier, Fish, Siegel, & Beversdorf, 2011; Taylor & Seltzer, 2011).

Prepared college students possess strongly developed social skills and life skills. These include, for example, sharing space, using an alarm clock and schedules to self-manage daily routines, making healthy dining choices amongst many unhealthy dining options, completing assignments on time without prompting, conversing with professors and other staff members, seeking help when necessary, and making or maintaining friendships. School psychologists can help students with disabilities to develop and hone their social skills in a number of ways. Efforts can begin with discussions about what living away from home could be like including topics such as conflict resolution with roommates, neatness and tidiness, and increased independence. School psychologists might have students role play during social skills lunch groups for practice in resolving conflicts with roommates and peers using hypothetical situation cards (i.e. you are uncomfortable because your roommate is having overnight guests many nights of the week). School psychologists can also enter special education or structured study classrooms to have class wide discussions around resource mapping in postsecondary education. Resource mapping activities target life skills and could include discussions or project-based learning where students develop lists of resources on college campuses to share with students in the classroom (i.e. Office of Residential Life, Counseling Services, Peer Mentoring). Finally, school psychologists might facilitate volunteer or work placement experiences for students where they can practice their social and life skills in a real community setting (Wilczenski et al., 2016). Work and volunteer experiences produce a number of positive outcomes for students with disabilities including a sense of inclusion when working alongside similar peers while giving back to the community, and an increased sense of confidence due to exposure to, and success in the work place (Wilczenski et al., 2016).

Autonomy, self-determination, and self-advocacy. Autonomy development is a prerequisite skill for developing self-determination and self-advocacy, and is also considered a fundamental developmental task of adolescence (Wehmeyer & Powers, 2007). Autonomy for adolescents is not a process of separation or detachment from family members; rather, it involves acting with one's preferences, interests, abilities, and needs without influence or help from others (Wehmeyer, 2000). Emerging research suggests that autonomy can be influenced by external forces such as familial or school beliefs and expectations (Smits, Soenens, Vansteenkiste, Luyckx, & Goossens, 2010). It is evident that even though autonomy as a process involves gaining independence, external forces can magnify or depreciate its organic development.

The IEP can be a prime example of a student's self-determination skills, or lack thereof. In K-12 education, decisions are often made for students in special education by the IEP team. As students mature, many districts and states will expect increased participation from students in the IEP process. However, students are often indifferent about the IEP – secondary students with disabilities report that they do not understand the purpose, feel as if adults on the educational team do not listen to them, and are unsure of how to act when they are invited to be involved (Martin, Van Dycke, Christensen, Green, Gardner, & Lovett, 2006). As discussed above, the importance of engaging adolescents in the IEP process to facilitate student-centered transition planning well before students reach the age of majority cannot be understated (National Center on Secondary Education and Transition, 2002). Despite the importance of student-centered transition planning, and acknowledgement from experts that students need to be explicitly taught how to actively participate in the

transition IEP meeting process, such training rarely occurs (Martin, Marshall, & Sale, 2004).

The Self-Directed IEP is an evidence-based intervention that teaches students to be active participants in their IEP meetings with an end goal of leading a meeting (Martin, Marshall, Maxson, & Jerman 1996). Arguably, teaching students to tangibly participate in their educational planning by leading meetings will prepare students to successfully self-advocate for support and services at the postsecondary level. Other curricula are available for teaching self-determination skills including "Steps to Self-Determination: A Curriculum to Help Adolescents Learn to Achieve Their Goals," "ChoiceMaker" and free programming from the Council for Exceptional Children such as "Teaching Self-Determination." Facilitation and involvement with these curricula and instructional practices are within the purview of school psychologists; as such it is important for school psychologists to be trained in the use of emerging transition curriculum and programs.

It should be noted that transition planning and programming for students moving from secondary to postsecondary education reflect traditional Western values, where young adults move from family dependence to independence in personal, vocational, and educational arenas (Wilczenski et al., 2016). The constructs of self-determination, autonomy, and self-advocacy are culturally loaded and may conflict with a family's cultural beliefs and values (e.g. group versus individual decision making and independence versus family connectedness). As such, when working on transition planning with culturally and linguistically diverse students and families, it is important to have an awareness of cultural differences (Wilczenski et al., 2016) and work with families to reach common ground while keeping the best interests of the student in mind.

Preparation Across Time

Three primary points in time and corresponding interventions that have been found to be predictive of students with disabilities being more successful achieving their postsecondary education goals are described as follows.

Early secondary: Setting expectations. It is important to consider first the students' interpretation of their disability, and second the instructional approach necessary to meet their individual needs. Research has demonstrated that a student's interpretation of their disability and abilities can be greatly influenced by the standards and expectations set by adults in their immediate home and educational environments (Doren et al., 2012). Students with disabilities should be held to the same educational standards and be given equitable access to the same opportunities as their peers when it comes to college planning. It is demonstrated in the literature that high expectations for the achievement of adolescents are precursors to postsecondary outcomes that confirm established expectations (Doren et al., 2012). Postsecondary expectations for achievement are transmitted to students through both overt and covert behaviors emitted by family members and school staff, which are then internalized and impact adolescents' values, beliefs, and motivations (Doren et al., 2012).

Seminal work from Wagner, Blackorby, Cameto, and Newman (1993) demonstrated that parents who held the belief that their child with a disability would attend college were most likely to have adolescents who moved on to postsecondary educational programming – as compared to parents with lower expectations. In addition to long term outcomes, like attending a four-year college, students with disabilities were found to have higher levels of social adjustment, classroom engagement, grades, and standardized testing scores when held to higher educational standards (Newman, 2005).

School psychologists can use their background in individual differences and lifespan development (Wilczenski et al., 2016) to consult with special and general education teachers, parents, administrators, and other related service staff on setting expectations for students with disabilities. When consulting with other adults around expectations for students with disabilities, school psychologists can stress the importance of taking a strengths-based and growth mindset approach when conceptualizing and planning postsecondary outcomes for students (Wilczenski et al., 2016). Further, school psychologists in many districts are considered leaders in advocating for

students with disabilities (Wilczenski et al., 2016); as such school psychologists can use this leadership position to set the example for other professionals as far as holding all students to realistically high standards.

Mid secondary: The college search. An effective college search for students with disabilities might include researching majors offered, sports programs, extracurricular activities, geographical location, campus size, cost of attendance, and more. Students with disabilities may need to do a more comprehensive search, and earlier in their high school career, than their non-disabled peers. Search criteria might include class size, available assistive technology for loan, accessible residence halls, campus accessibility, quality of disability support services and accommodations offered, available tutoring and academic supports, available psychological and counseling services, meal plans for related dietary restrictions, requirements for course substitutions, and degree program requirements. High school students who received a waiver for high school foreign language graduation requirements should be advised that the same waiver may not be permissible at the postsecondary level depending on their elected degree program requirements (Madaus & Shaw, 2004). For example, a student with a specific learning disability in reading who wishes to study international business would likely be unable to waive the foreign language requirement of that particular degree program, as foreign language is a key competency for international business. Doing so would be a modification of the degree program requirements, not an accommodation to promote equal access to the college curriculum.

School psychologists can help facilitate a comprehensive and effective college search for students with disabilities by first being knowledgeable about the many postsecondary education options that area available to students (Wilczenski et al., 2016). For example, a college search is not limited to traditional four-year programs. Students with disabilities may consider two-year associates degree programs or trade schools, non-credit offering skill-based learning opportunities (e.g. intensive language curriculum offered at specialty colleges), post graduate year(s) at preparatory or boarding schools, life skills and vocational rehabilitation training programs, and adult basic education. Students with and without disabilities may elect to pursue vocational training programs, or vocational opportunities in general, instead of attending a college or university. School psychologists, and the transition IEP team, should be knowledgeable of the many different vocational options available to students. These could include working with job coaches, working with organizations like Easter Seals for supported employment for students, exploring 18-21-year-old special education programs that include vocational experience components, and advocating for the individual goals of students. School psychologists can use their knowledge about individual students to consult with guidance counselors or career placement professionals in high schools about the many options available to students with disabilities, beyond the traditional four-year college route. Cross-disciplinary planning with other professionals will likely facilitate a breadth of choices for students based on their individual needs and skills set.

Late secondary: Understanding changes to educational entitlement. In K-12 education, students with disabilities are provided with legally mandated special education services under IDEA – an outcomes-based educational entitlement law (Lombardi et al., 2013). In postsecondary education, students are no longer represented within IDEA; rather, Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (ADA) ensures college and university access. Section 504 and the ADA mandate that students with disabilities participate fully in general education curriculum requirements, and self-disclose and advocate for their accommodations and services based on need (Lombardi et al., 2013). It is important to note that students with disabilities are eligible to receive accommodations in postsecondary education to allow access to learning, however the instructional setting, demands, and expectations cannot be modified (Madaus & Shaw, 2004). Postsecondary education allows for accommodations to ensure access to curriculum while holding all students to the same universal university standards, not modifications to curriculum. Meaning that the fundamental requirements and competencies of a given degree – be

it an associates to an advanced degree – cannot be modified due to a student's disability. Rather a student can be given different accommodations to promote their access to the curriculum, such as a hired peer note taker.

These discrepancies can make the transition to postsecondary education difficult for students with disabilities. First, only about 25% of students who previously received modifications or accommodations will disclose their disability in postsecondary educational settings (Newman, Wagner, Cameto, & Knokey, 2009). Postsecondary education is entirely different for students with disabilities, who may share the following common experiences: decreased levels of support from staff, increased instructional demands, magnified level of course difficulty, negative faculty attitudes toward disability, quality or availability of disability support services, and demand for documentation and self-disclosure (Madaus & Shaw, 2004; McGuire, Scott, & Shaw, 2003). Students who are unable to self-advocate or disclose that they have a disability will not receive accommodations. In other words, there is no IEP team or PPT meeting for college students – the college student must drive their own process.

One main issue faced by postsecondary disability service providers includes documentation. A large discrepancy exists between the documentation that students provide from secondary institutions, and the rigor of documentation deemed acceptable and permissible by postsecondary disability staff to make objective decisions regarding accommodations (Banerjee, Madaus, & Gelbar, 2015). Disability services on college campuses receive a variety of documentation from students including summary of performance, psychoeducational reports, IEPs, 504 Plans, and more. Although an IEP or Section 504 accommodation plan may provide important information for higher education disability service professionals, the postsecondary educational institution is not required by law to honor or implement the same services a student may have received in high school as delineated on an IEP or other K-12 documentation. Further, some accommodations that students may have received in high school (e.g. word banks for testing) are not feasible in the college setting as they represent a marked change and modification in expectations set forth from test directions for all students.

A more viable piece of documentation includes a comprehensive and recent psychoeducational evaluation. In conjunction with a comprehensive and recent evaluation, the student should be fluent in explaining their unique learning profile, strengths, differences, and challenges. Increasingly so, disability services in higher education are valuing the student self-report, which highlights the need for students to be self-aware and able to self-advocate for what they need as far as accommodations and services. For example, does the student require extended time on testing to re-read test questions due to a specific learning disability in reading? Or do they require extra time on exams to do deep breathing exercises due to a generalized anxiety disorder? On the college campus, disability service professionals engage in an interactive process with students to determine which accommodations may be beneficial or appropriate for the student and their course work. This process looks entirely different from student to student, and is entirely tailored to the needs of individual students. Further, the accommodations that students request must be directly related to barriers faced in the academic environment. As such, a student may require a note taker in a given class due to the lecture style of the course, however, in a course where the lecture slides are provided to all students, a note taker may not be appropriate for the student. Likewise, a personal assistant may be necessary for a student with a physical disability taking a laboratory requirement course, but would be entirely unnecessary for their Spanish course.

School psychologists can assist students in this process by assuring that students possess and can explain their K-12 documentation, consulting with disability service offices on college campuses to learn about what the process for obtaining accommodations is like for new students, and role playing or practicing disability disclosure meetings so students feel comfortable talking about their disability in front of unfamiliar adults before arriving on the college campus. School psychologists can scaffold this process for students by having beginning

conversations with students about their disability, learning style, current use of accommodations, strengths, and educational interests (Wilczenski et al., 2016).

Professional Development and Best Practice Recommendations

Recent research has established the importance of professional development around the quality of transition services (Doren, Flannery, Lombardi, & Kato, 2013). School psychologists in particular can address these skill gaps in professional competency by seeking out or advocating for professional development in transition planning for students with disabilities (Wilczenski et al., 2016). Quality professional development around transition planning begins with the core components of a strong IEP and postsecondary goals. This may include reviewing legal transition requirements of the IEP, a team problem-solving and strategic model for development of postsecondary goals, and tiered services that emerge from evidence-based instruction for adolescents and adults with disabilities (Doren et al., 2013). Lecture or instruction-based professional development opportunities have demonstrated contraindicated results and low levels of engagement. Rather, professional development around transition planning should include case activities using examples and non-examples, self-assessments, feedback from peers and training staff, and ongoing learning through communities of practice (Doren et al., 2013).

Additionally, well-informed school districts participate in partnerships with local universities. Such partnerships might include open dialogues with postsecondary disability service providers, attendance of transition panels and discussions, and student visits to college campuses. School psychologists interested in transition or postsecondary disability services may explore graduate courses in rehabilitation psychology and disability studies, re-specialization programs in transition or postsecondary disability services, postdoctoral fellowships in community health or university settings, self-study, and supervision from a mentor. As an initial step, school psychologists hoping to improve their contributions to transition services can engage in the best practice recommendations provided in Table 1. These recommendations are culled from the professional literature and provide a "jumping off point" for expanding school psychologists' role in high-quality transition planning.

Conclusions

School psychologists working in high schools can provide enhanced transition services to students with disabilities including but not limited to: conducting assessments, considering students' transition needs, serving on IEP meetings, collaborating with local postsecondary educational institutions and vocational centers, and advocating for the needs of individual students. Although not traditionally delineated within the role of the school psychologists, transition services are complementary to current service provision. Familiarity with changes to educational entitlement, relevant legislation, a wide range of postsecondary educational options, and effective instructional practices and interventions for teaching prerequisite college skills should be developed in the modern school psychologist. To address the needs of students with disabilities, it is imperative that school psychologists are able to apply their background in strengths-based professional practice in consultation with other adults involved in transition planning. Although advocating for the student's unique needs is the primary goal of transition planning, it is imperative to highlight student abilities over deficits, and value the preferences and interests of the student in comprehensive transition planning. School psychologists can collaborate with students and families to establish realistic and attainable postsecondary educational goals, ensure that students are participating and exceling in prerequisite secondary coursework, model and teach students self-advocacy skills, and assist students in completing a comprehensive college search with a focus on disability supports.

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TABLE 1: BEST PRACTICE RECOMMENDATIONS FOR TRANSITION PLANNING FOR POSTSECONDARY EDUCATION

Recommendation	Evidence-Base
1. Hold all students to high educational standards based on ability level and preferences. Assist students in developing realistic postsecondary educational goals and work to ensure students are prepared to obtain such goals through academic, vocational, and social or life skills training. Transition preference assessments should be frequently used to ensure efforts are truly student-centered.	Doren et al. (2012); Wagner et al. (1993)
2. Provide comprehensive transition planning and support to all students with disabilities using a strengths-based, individualized approach. Students should learn and demonstrate the strong self-advocacy and self-determination skills necessary for a successful college transition.	Martin et al. (2004); Smits et al. (2010); Wehmeyer (2000); Wehmeyer & Powers, (2007)
3. Work with students to identify their personal strengths and challenges. Coach students in using their unique strengths while simultaneously recognizing their challenges, or areas where they may require additional services and support. Engage students in dialogue or project-based learning around the differences in levels of support offered to students with disabilities between secondary and postsecondary education.	Lombardi et al. (2013); Madaus & Shaw (2004); McGuire et al. (2003); Newman et al. (2009);
4. Involve students in the transition IEP process. Prior to involvement students may benefit from explicit instruction including didactic dialogues, role-plays, and educational lessons on the content and meaning of the IEP. School Psychologists should make informed decisions about implementing evidence-based transition curricula with their students.	Doren et al. (2013); Martin et al. (1996)
5. Involve families in transition planning while simultaneously encouraging the development of student autonomy. Coach and assist students and their families on conducting a thorough college search with a disability perspective.	Doren et al. (2012); Smits et al. (2010); Wehmeyer & Powers (2007); Wehmeyer (2000)
6. Include developmentally appropriate components of life and adaptive skills training in transition planning as success in college relies on much more than solid academic skills. Students may benefit from social skills training with a future focus on college life including conflict-resolution with roommates, self-advocating with professors, and making healthy choices.	Balfe & Tantam (2010); Coyne & Fullerton (2016); Hillier et al. (2011); Taylor & Seltzer (2011)
7. Provide adequate, comprehensive, and meaningful documentation of student disabilities to postsecondary educational institutions. Ensure that students understand the meaning of their documentation, and disability status. Students should be able to have a dialogue about their disability; practicing the student self-report is crucial.	Banerjee, Madaus, & Gelbar (2015)
8. Participate in relevant professional development or in-service training if you are involved in special education transition planning. Districts should familiarize themselves with the transition legislation relevant to their state, and at the federal level as mandated in IDEA.	Doren et al. (2013)
9. Partner with postsecondary educational institutions and transition resource offices to learn more about post-school support for students with disabilities.	Doren et al. (2013)

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Preparing Students with Disabilities for Successful Transition into Higher Education

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"We will set a clear goal: Every student should graduate from high school ready for college and a career, regardless of their income, race, ethnic or language background, or disability status. Increasingly, a college education is necessary for success" (Reauthorization of the Elementary and Secondary Education Act, 2010)

Students with disabilities are attending higher education institutions in rising numbers, but they remain behind their peers in attendance and achieving baccalaureate degrees. The last wave of the National Longitudinal Transition Study-2 (NLTS-2) reports that within 2 years of leaving high school approximately one out of five out-of-secondary-school youth with disabilities (19%) are attending postsecondary school. This is a rate less than half that of their peers in the general population. Although young adults with disabilities are enrolled in 2-year and community colleges at a rate close to their peers without disabilities (10% vs 12%) this is in sharp contrast to enrollment in 4-year colleges (6% vs 28%).

The National Longitudinal Transition Study-2 (NLTS-2) study further found that within 8 years of leaving high school, the completion rate for students at 4-year colleges was 34% for students with disabilities compared to 51% for the general population. The Bureau of Labor Statistics provides information that a post-secondary education leads to higher income and opportunities. Average yearly income for those with graduate or professional degrees is $86,580. The average yearly income for individuals with bachelor degrees is $55,016;

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associate degrees, $39,936; some college/no degree, $37,388; high school diploma, $33,176; and less than high school degree, $23,452.

National post-school outcome data reveal a need for improved services to support successful transition to higher education for students with disabilities. For over two decades, the Center for Change in Transition Services (CCTS) in Washington State has supported school personnel in delivering effective transition services and tracking post-school outcomes for all students in the state receiving special education services. Based on our experiences through the CCTS and the literature on transition, we offer a review of transition requirements and recommendations for school psychologists as they work in partnership with teachers, families, and students to support the transition needs of young people with disabilities who wish to attend higher education institutions.

The school psychologist in transition planning. While the transition team members vary by school and district, the transition process is typically led by secondary special education teachers and supported by school psychologists, counselors, general education teachers, related service providers, and families. Larger districts may have designated transition coordinators whose primary job roles are focused on transition planning. With their expertise in assessment, consultation, collaboration and advocacy, we believe school psychologists should hold pivotal roles in transition planning. Yet, a comparison of attitudes of school psychologists and transition coordinators revealed that both groups believe school psychologists should be more involved in transition planning (Lillenstein, Levinson, Sylvester, & Brady, 2006). Barriers to greater involvement include a lack of understanding of transition requirements and time due to high overall caseloads in secondary settings (Staab, 1996). To effectively support youth in transition, school psychologists must understand transition requirements, federal laws impacting students in K-12 and higher education settings, and best practices in preparing students for higher education success. Given the shared beliefs among school psychologists and transition coordinators that school psychologists should be more involved with transition activities, we urge school psychologists and transition coordinators to advocate for the resources and training required to facilitate participation.

Federal Requirements for Transition Planning

Transition planning for youth with disabilities was first mandated in 1990 with the authorization of PL 101-476, the Individual with Disabilities Education Act (IDEA). When reauthorizing IDEA in 2004, Congress recognized there was a need for improved transition services to ensure positive post-school employment outcomes for youth with disabilities. The term “transition services” means a coordinated set of activities for a child with a disability that “is designed to be within a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child’s movement from school to post-school activities, including postsecondary education; vocational education; integrated employment (including supported employment); continuing and adult education; adult services; independent living or community participation; and [602(34)(A)] and “is based on the individual child’s needs, taking into account the child’s strengths, preferences and interests” [602(34)(B)] (IDEA, 2004).

The following section provides a review of transition mandates under IDEA. The National Technical Assistance Center on Transition (NTACT) website provides in depth information and resources about these requirements. School psychologists should also be aware of state-specific regulations for transition services. For instance, transition services begin at age 14 in several states.

The transition process. The transition flow chart (see figure 1) depicts the process of transition. Although transition services must be in place by the time a student reaches age 16, services can start earlier

if the IEP team determines it necessary. School psychologists should encourage the team to begin transition services earlier for students who have significant disabilities, multiple needs for transition to life after high school, are at risk of dropping out of high school, or have other factors that may impact positive post-school outcomes such as poverty, trauma, pregnancy or parenting.

The transition assessment. The first step in developing the transition portion of the IEP is the transition assessment. Given their training in assessment, school psychologists have skills to bring to this team effort. Transition assessments can be formal or informal and must identify student needs, strengths, preferences and interests; measurable post-secondary goals; transition services; and the course of study. School psychologists can assist in gather data through published assessment tools, observations, and student and family interviews. Transition assessments should take into consideration academic, daily living, social, vocational, and self-advocacy skills (Levinson & Palmer, 2005). The NTACT provides resources related to transition assessment that are likely to prove helpful for school psychologists. The transition assessment provides the basis of writing annual goals and coordinating services with higher education or adult service agencies—and it must be reviewed and revised annually.

The transition plan. Transition services are specified through the transition plan, which is an integral part of the student's IEP. The transition plan must be included in the first IEP to be in effect when the student turns 16. School psychologists can work with the team to ensure that the student is invited to the transition IEP team meeting as required. The school psychologist can also assist the team in identifying transition services that are based on the student's strengths and needs, as well as preferences and interests. The transition plan has two parts: postsecondary goals that are measurable and based on age appropriate transition assessments; and services needed to assist the child to receive their post-school outcomes. Information and linkages for adult agencies and services, including Vocational Rehabilitation and Disability Student Services in higher education, should also be included in transition planning. School psychologists can be an important partner in assuring student input is included early, decisions are data-based, and appropriate recommendations for transition services are provided.

Summary of Performance. Finally, the IDEA requires a summary of performance (SOP) for all students exiting high school. The SOP must include information related to the student's disability, academic performance, and accommodations necessary to meet postsecondary goals. The information provided in the summary should be adequate to satisfy the disability documentation required upon entry into higher education institutions, which we discuss in greater detail later in this paper. School psychologists should serve as important contributors in the development of the SOP as it requires a summary of the disability in the context of prior assessment findings.

Supporting Successful Transition to Higher Education

Supporting students with disabilities to succeed in higher education settings requires more than adherence to the transition regulations reviewed above. It requires that school psychologists partner with their teams to ensure that students are prepared with the academic and self-advocacy skills that will be required when they reach the higher education setting. In the following sections, we offer recommendations to foster readiness before a student enters high school and recommendations to prepare them for transition while enrolled in high school.

Build readiness before students reach high school. Successful transition planning begins well before students with disabilities enter high school. School psychologists working in elementary and middle schools can support the preparation of students

with disabilities by ensuring the development of academic, independent learning, and self-advocacy skills (Kellems, Springer, Wilins, & Anderson, 2016; Papay, Unger, Williams-Diehm, & Mitchell, 2015). Starting in elementary school, we begin by ensuring students with disabilities develop strong academic skills. If students with disabilities are to attain the skills needed to progress to higher education, it is critical that we hold them to the same or comparable standards set within the general education curriculum to the maximum extent possible—and support them in achieving those standards (Witte, 2014). Research has shown that elementary students with disabilities who receive instruction in general education settings are more likely to experience successful transition to higher education (Landmark, Ju, & Zhang, 2010; Williams-Diehm & Benz, 2008). School psychologists can help IEP teams make placement decisions based on the least restrictive environment, with the goal being maximum exposure to the general education curriculum while still meeting the individualized educational needs of the student. To meet this ambitious goal, teams should consider the use of assistive technologies. Assistive technologies, ranging from spellcheck and calculators to e-readers and speech-to-text software, are allowable accommodations in many higher education classrooms for students with disabilities (Witte, 2014). The use of assistive technologies can facilitate access to grade level curriculum by ensuring that students do not miss academic content due to reading, writing, or math-related disabilities. As students mature, an increasing emphasis should be placed on the development of independent learning skills. Interventions designed to increase executive functioning, organizational skills, and assignment completion are critical to foster the independent learning required in the higher education classroom (Hamblet, 2014).

As we work to develop strong, independent academic skills, we must also foster the development of self-advocacy skills. Self-advocacy skills require that students understand and can articulate their disability, how it impacts their learning, and their unique learning needs (Milson & Hartley, 2005). Working together with families and educators, we can provide supports and experiences that help students develop the self-advocacy skills they will need in higher education settings (National Council on Disability, 2007). As students move through their K-12 education, they should become increasingly aware of their disability and how it impacts their learning. In age-appropriate ways, we must support them engaging in conversations with teachers about their learning needs, classroom accommodations, and overall performance in courses. We can also build self-advocacy skills by including youth in special education meetings as age appropriate. For elementary age students, this may involve attending a portion of the IEP meeting and, perhaps, articulating a goal for themselves. As students mature, they should increasingly participate as an active member of the team and lead portions of their meeting.

Preparing Students for Transition to Higher Education

For students with disabilities, gaining acceptance into a higher education institution is merely a first step. Upon entry, they will need to disclose documentation of their disability to the institution's Disability Student Services office to be eligible to receive accommodations and they will need to engage in ongoing conversations with their instructors regarding their accommodation needs (Hamblet, 2014; Witte, 2014). To support students and families in this transition, it is critical that school psychologists understand how the transition between K-12 and higher education is marked by an intersection of federal laws and regulations. School psychologists should also help the student and their family understand how these regulations will impact the student in the higher education setting. While students with disabilities are *served* under IDEA in the K-12 system; they are only *protected* under ADA in

the higher education system. While parents have rights to access K-12 school educational records under the Federal Education Records Privacy Act (FERPA, 2012), these rights shift to the student upon reaching the age of 18 and the parent no longer has access to records or other information regarding their student's enrollment or performance without permission from their daughter or son. Thus, the responsibility for ensuring access to accommodations, learning supports, and advocacy falls entirely upon the student. Therefore, it is critical that we empower the student with the information and skills needed to advocate for their learning needs.

Documentation of the disability. Under IDEA, school psychologists work with a team to ensure that each student with a disability undergoes triennial reevaluation to determine the continued need for special education services while enrolled in the K-12 system. While the team is required to conduct this reevaluation every three years, the team may conduct the review based on existing data without gathering current assessment data to verify continued eligibility. This practice meets the minimum legal requirement under IDEA, but it is not best practice if it causes a student to leave high school without a recent evaluation documenting her or his disability. While the school bares the responsibility to document disability under IDEA, the student bares this responsibility thereafter (Johnson & Rich, 2009; Katsiyannis, Zhang, Landmark, & Reber, 2009; Kellems et al., 2016; Witte, 2014). Without current documentation, students may face the cost of private evaluation as a significant obstacle to accessing services. Therefore, we recommend that school psychologists ensure that every student leaves high school with a full reevaluation completed at some point during high school (Hamblet, 2014; Johnson & Rich, 2009). The evaluation should clearly document the disability, functional limitations that result from the disability, and the specific accommodations required to support the student's learning (Johnson & Rich, 2009; Witte, 2014). Upon exit from high school, the student should receive a copy of the SOP, including a detailed summary of the most recent reevaluation, updated disability- related information including functional limitations, and specific accommodations recommended in the higher education setting (Hamblet, 2014; Kellems et al., 2016).

Access to disability student services in higher education settings are driven by the legal requirements under the Americans with Disabilities Act (ADA) of 2008 and Section 504 of the Rehabilitation Act of 1973. Whereas IDEA provides for services within specific disability categories, the ADA defines a disability as "a physical or mental impairment that substantially limits one or more of the major life activities, a record of such an impairment or being regarded as having such an impairment." Major life activities may include caring for oneself, walking, seeing, hearing, breathing, working, performing manual tasks, and learning (ADA, 2008). There is no federal law or regulation requiring documentation of disability under ADA. However, higher education institutions are permitted to require a reasonable level of documentation (AHEAD, 2012). With no regulatory guidance from ADA on disability documentation, most higher education institutions follow guidelines issued by the Association on Higher Education and Disability (AHEAD). The AHEAD released new and substantially different guidelines in 2012 based on 2008 amendments to the ADA with the goal of promoting seamless access for individuals with disabilities to accommodations (AHEAD, 2012). These guidelines specify three levels of documentation, including primary documentation through student self-report solicited through an interview or questionnaire; secondary documentation via a disability coordinator's assessment of the student's self-report; and tertiary documentation, including medical records, prior evaluations, the IEP or SOP (AHEAD, 2012). While these changes are promising in their capacity to increase access for those with disabilities, the result may be greater variation in documentation requirements across institutions. The

Disability Student Services websites of institutions typically publish requirements and a follow-up phone call may prove helpful in clarifying any vague requirements. Also, states have affiliate AHEAD associations which should prove helpful in clarify requirements for institutions in each state. In the interest of promoting self-advocacy, school psychologists might assist students in locating and understanding this information from their preferred higher educational institutions.

Accessing higher education services. When students enter higher education, the responsibility for seeking accommodations shifts from the school to the student (Hamblet, 2014; Newman, Madaus, & Javitz, 2016). Research has shown that less than 40% of students with disabilities disclose their disability to the Disability Student Services of their higher education institution (Wagner, Newman, Cameto, Garza, & Levine, 2005), leaving them ineligible for accommodations (Newman et al., 2016). Additionally, less than half of students with disabilities access university supports available to all students (e.g., learning assistance and writing support centers). Students who left high school with a transition plan that specified accommodations in higher education were significantly more likely to seek and receive accommodations (Newman et al., 2016). Additionally, those students who disclose and receive accommodations tend to have higher post-secondary GPAs (Lightner, Kipps-Vaughan, Schulte, & Trice, 2012).

As part of the process of accessing accommodations, student may undergo an interview with a Disability Student Services coordinator where they will be expected to articulate their disability, functional/educational limitations, and accommodation needs. A student's interview may serve as sufficient documentation when it is clear and consistent with other documentation (AHEAD, 2012). Too often, students find themselves engaging in this conversation for the first time upon entry into higher education. If they are unable to describe their disability and learning needs, additional external documentation may be required (AHEAD, 2012). Therefore, transition planning should include explicit guidance for students in accessing disability accommodations. Students are likely to require coaching about how to reach out to the Disability Student Services office, practice articulating the nature of their disability, functional limitations and learning needs, and accommodations needed to ensure equitable access (Hamblet, 2014). As part of this interview, students should be prepared to provide copies of their SOP.

Self-advocacy in the higher education classroom. Just as the student bears responsibility for disclosing and documenting the disability to receive accommodations, they also bear responsibility to communicate with instructors regarding approved classroom accommodations (Floyd, 2012; Katsiyannis et al., 2009; Witte, 2014). Instructors vary considerably in their attitudes toward accommodations and their implementation of them (Katsiyannis et al., 2009). Restrictions under FERPA prevent instructors from sharing any information with parents attempting to support their student's success in the post-secondary setting. Therefore, students will be better prepared for self-advocacy in the higher education classroom when they possess a strong understanding of their disability and their learning and accommodations needs (Milsom & Hartley, 2005). Students should enter higher education settings well prepared to articulate how they learn and what supports they need to be successful. Instructor office hours are an opportune time to engage in such student- instructor conversations. Additionally, students should be coached to take advantage of supports that are available to all learners on campus, including learning assistance, writing, and counseling centers (Witte, 2014).

Conclusion

Students with disabilities are increasingly attending higher educational institutions. Post-school

outcomes nationally reveal that outcomes for students with disabilities are not as positive as those of their peers without disabilities. We believe that school psychologists can play a critical role in improving the transition experience for youth with disabilities entering higher educational settings. Therefore, the objective of this article has been to extend our lessons learned from the CCTS and the transition literature to recommended practices for school psychologists. While there are significant barriers to school psychologist's involvement in transition planning, opportunities exist for us to partner with special educators, school counselors, students and their families to prepare students for successful transition into higher educational environments. The National Technical Assistance Center on Transition (NTACT) website provides in depth information, resources, and other guidance on best practices in transition services that may prove helpful in building the knowledge and skills of teams in this critical practice domain.

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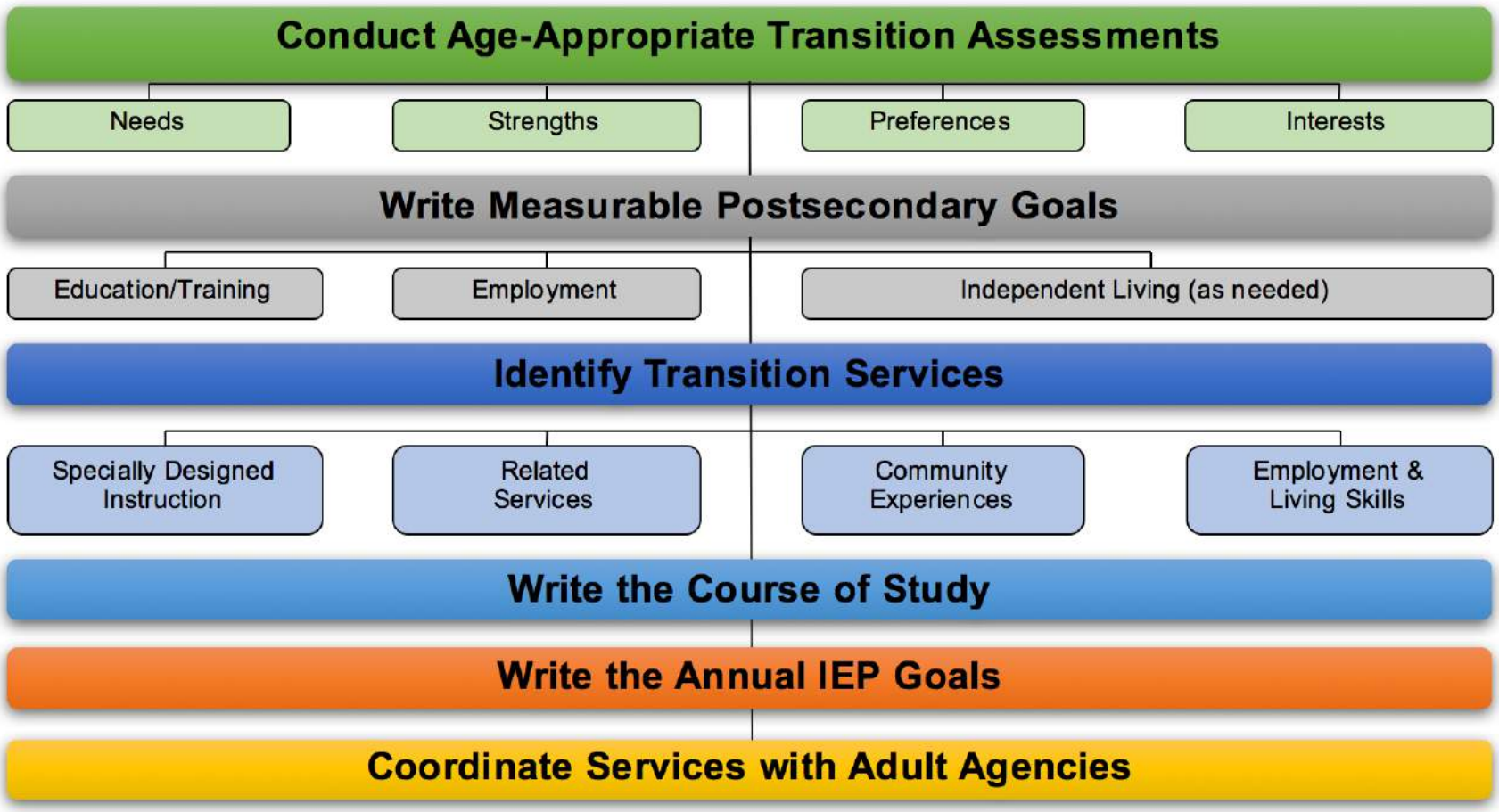
FIGURE 1: TRANSITION SERVICES FLOW CHART.

Adapted from "Transition Services Flowchart," by C. Johnson, 2004, Center for Change in Transition Services, Seattle University. Seattle, WA. Permission granted.



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Facilitating Inclusive Postsecondary Education: A School Psychology Perspective

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Students with intellectual disabilities (ID) have more access to postsecondary education (PSE) now than ever before. Through legislative changes and federal funding initiatives, inclusive postsecondary education (IPSE) programs provide an opportunity for students with ID to attend institutions of higher education (IHEs) and pursue personal and academic growth and development alongside their peers. As uniquely skilled individuals within school settings, school psychologists can utilize expertise in various areas to foster quality transition planning and facilitate student access to IPSE. This article provides an overview of IPSE opportunities and specific strategies that school psychologists can implement within their practice to help students with ID access these programs.

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Graduating from high school is an exciting time for most students. This transition presents new opportunities and the realization of dreams and aspirations, and it is a time to further develop cognitively, socially, and emotionally. For students with an intellectual disability (ID); however, life beyond high school often can be quite different from their peers' experience. At age 18, students with ID generally watch their peers graduate high school and move on to postsecondary experiences while they often remain in the K-12 system until they are 22 years old. Also, for many adolescents with ID, their secondary school experiences put them at a disadvantage for successful adult outcomes as they are less likely to earn a regular high school diploma and are less likely than other youth with disabilities to engage in school, work, or vocational training (Wagner, Newman, Cameto, Garza, & Levine, 2005). For example, for ages 16 to 64, only 18% of persons with a disability were employed in comparison to 72% for those without a disability in 2015 (The U.S. Bureau of Labor Statistics, 2016).

Over the past three decades, increasing numbers of students without disabilities have chosen to attend college rather than directly enter the workforce. Evidence supports this trend as enhancing a range of adult outcomes as people who graduate from college earn more money and are more likely to have a career that they enjoy (Ma, Pender, & Payea, 2016). In addition to monetary benefits, attending postsecondary programs allows young adults the opportunity to pursue a variety of interests and to immerse themselves in an environment where they make self-determined choices. However, for individuals with a disability, postsecondary options traditionally have been limited. For example, in 2015 only 15% of persons with a disability age 25 and over had a bachelor's degree or higher, compared to 33% for those without a disability (The U.S. Bureau of Labor Statistics, 2016).

In comparison to other students with disabilities, youth with ID generally have less access to general education classrooms, demonstrate lower levels of academic achievement, have fewer postsecondary education goals reflected on their transition plans, are less likely to earn a regular high school diploma, and are much more likely to stay in school until they age out of special education services at age 22 (Grigal, Hart, & Migliore, 2011; Newman, Wagner, Cameto, & Knokey, 2009; Shaver; Papay, 2011). Young adults with ID often find themselves with few positive options once they leave secondary school, and 81% of people with ID receive services and supports in facility-based and non-work settings (Butterworth et al., 2013). Given the diminished employment, lack of independence, and poor quality of life outcomes for many adults with ID and the positive impact that college attendance has on these dimensions of adulthood for those without disabilities, postsecondary options should be made available and supported for students with ID.

Postsecondary Education

Postsecondary education (PSE) refers to educational opportunities for students after high school including colleges, universities, and technical schools. Over the past 75 years, there has been a steady trend of increased overall participation in PSE in the United States, with the percentage of adults between 25 and 34 with at least a bachelor's degree growing from 5% in 1950 to 36% in 2015 (Ma et al., 2016). Furthermore, of the 3 million youth age 16 to 24 who graduated from high school between January and October 2015, about 2.1 million (69.2 percent) were enrolled in college in October of that same year (The U.S. Bureau of Labor Statistics, 2016).

There are a number of benefits of PSE including increased employment, higher income and lifetime learning, improved personal satisfaction, and elevated quality of life (Ma et al., 2016). Earning a bachelor's degree also leads to increased participation in civic and health-related behaviors such as voting and exercise (Ma et al., 2016). In 2015, the median earnings of people with a bachelor degree were $24,600 higher (67%) those with only a high school

education (Ma et al., 2016).

Postsecondary education also offers students the chance to explore personal goals related to learning and enhancing social connections as outlined below (Papay & Griffin, 2013). A college experience exposes students to an array of career possibilities and exposes them to opportunities to meet people from different cities, states, and (even) countries, contributing to a more tolerant and accepting attitude towards different cultures. For example, students in PSE typically complete a range of coursework both within and outside their major, and they often change their major based on exposure to courses and a time of reflection on their abilities and interests. Many students in PSE programs are exposed to subjects and fields that they knew little about prior to attending college, and these experiences are important to refining their choices about personal, social and career options.

Postsecondary Education for Those with Disabilities

A lower percentage of students with ID attend postsecondary education than any IDEA disability category (Wagner et al., 2005). Although students with ID often report goals for college or university attendance that are similar to their peers (e.g., to be more independent, to develop friendships with peers, to go to class and social events, and to get a better job), the educational system historically has had diminished expectations for these students and these perceptions are often internalized by students themselves (Grigal, Hart, & Paiewonsky, 2010; Moon, Grigal, & Neubert, 2011). Due to institutional thresholds for acceptance into PSE, such as academic requirements (e.g., SAT or ACT scores, minimum high school GPA, and a high school diploma), as well as adaptive requirements (e.g., independent living skills), young people with ID have typically been denied access to PSE.

However, increased recognition of the benefits of PSE for students with ID were reflected in the addition of the Higher Education Opportunity Act (HEOA) of 2008 (PL 110-315), a reauthorization of the Higher Education Act (PL 89-329). Under this legislation, the federal government encouraged colleges and universities to provide students with ID with more opportunities to attend and participate. The HEOA is the first law that specifically granted students with ID the opportunity to attend institutions of higher learning (IHEs) and provided access to financial aid, such as Pell Grants and Work-Study opportunities. It also provided the foundation for colleges and universities to create Comprehensive Transition Programs (CTP) on their campuses, under which students with ID can access federal financial aid. Lastly, HEOA provided funding for model inclusive postsecondary programs as well as a supervising entity, Think College, to provide technical assistance, develop program standards, and evaluate program outcomes. As a supplement to HEOA, the U.S. Department of Education funded Transition and Postsecondary Programs for Students with Intellectual Disabilities program (TPSID) grants in 2010 to specifically provide opportunities for people with ID to attend PSEs by giving money to create or expand programs for students with ID on campuses across the nation (U.S. Department of Education, 2015). In order to continue the expansion of PSE access for students with ID, a second round of TPSID grants were awarded in 2015.

Inclusive Postsecondary Education

Inclusive postsecondary education refers to a "formal arrangement of services that create access to academic and social participation in a two- or four-year accredited degree granting college or university" (Grigal, Hart, & Weir, 2013, p. 53). Currently, there are about 271 IPSE programs across 48 states in the United States. The number of IPSE programs has grown from 25 in 2004 to 248 in 2016; thus, it is clear that there is a demand for these types of programs (Grigal et al., 2017). Many IPSE programs are designed for students who have exited high school, although some offer a dual enrollment

option where 18-21 year olds remain enrolled in high school while they attend college.

While most programs focus primarily on employment, there is a lot of variability among programs' educational philosophy and goals. The degree of inclusiveness also varies, with some IPSE programs being fully inclusive while others are substantially separate or implement a mixed/hybrid of inclusion and separate program for students with ID. A typical IPSE experience involves participating in college courses (typically through an audit), and inclusion in campus life by participating in clubs, intramural sports, and various social activities. Often, students live on campus with a range of formal and informal supports in place.

Benefits of Inclusive Postsecondary Education

There are a range of benefits from participating in IPSE that parallel the types of growth experienced by college students without disabilities including improved employment outcomes, increased earning potential, and accelerated growth across academic, social, and functional domains (Thoma et al., 2011). In an evaluation of the performance of the initial 27 TPSID-funded model programs from 2010-2015, 846 students with ID worked in a paid job while attending their program, and over 1,000 students earned a credential upon program completion (Grigal, Hart, Smith, Domin, & Weir, 2016). This evaluation report indicated that 76% of participating students were engaged in employment or career development within 90 days of exiting the program, and 40% of students had a paid job within 90 days of exiting the program during the 2014-15 school year. Also, of those students employed, 45% had never held a paid job prior to the TPSID program, and 82% of their post-participation jobs were paid above minimum wage. In addition to paid employment, 60% of students participated in other career development activities, such as volunteering, community service, and service learning.

Each TPSID is required to grant a meaningful credential upon completion, with the most common credential being a certificate, although some do grant an associate and bachelor degree that is available to all students at that college or university (Grigal et al., 2017). The following description offers an example of a certificate accomplishment:

> *"Rachel landed the job of her dreams as a veterinary assistant in a rural clinic near her home. Her experience at Virginia Commonwealth University (VCU) helped her get there. Rachel graduated from VCU with a certificate from the ACE IT in College program. Throughout the two-and-a-half- year program, she maintained an average of 25 hours of work each week with her job at a grocery store while completing the requirements for the ACE IT in College certificate. Living in a rural area, Rachel developed the confidence to drive and park at an urban campus. She practiced problem solving when her car broke down on the way to class. She became an avid spokesperson for the VCU ACE IT College program. Rachel worked steadily through the program, developing the confidence and determination to achieve her goals*." (www.thinkcollege.net).

In addition to employment benefits of IPSE attendance, participating students reported improved emotional well-being, interpersonal relationships, self-determination, and social inclusion (Grigal et al., 2017). Also, with nearly 96% of students across all TPSID programs participating in extracurricular and social activities on campus, students with ID were exposed to a range of opportunities to meet new people and to develop meaningful and potentially long-term friendships with others. Additionally, TPSID programs were purposeful in addressing students' self-determination. This commitment required active engagement with students in planning their courses, and identifying academic, career, and independent living goals. Person-centered planning,

academic advising, and a stated process for family involvement were all ways that these model programs encourage their students to develop their self-determination skills (Grigal et al., 2017). A description of the personal development benefits of participation in a TPSID follows:

> "*Chris from the Giant Wildcat Academy at Indiana Wesleyan University has gone from a shy, dependent boy to an adventurous, outgoing young man. When Chris first attended college, he would not leave our side. He would only walk on campus to a pre-determined destination with a friend and then come right back. Now, Chris will independently go to the library to work on the computer, go to the gym to work out, go to the coffee shop, and take guests on tours! He has also, through our volunteer sessions, adopted a grandpa (Harry) at a local nursing home. Chris, on his own time, started to go visit Harry on a daily basis on his bike. He calls this 'going to work.' He has gotten so comfortable doing this that he now travels all over town on his bike visiting friends*." (www.thinkcollege.net).

Barriers to Inclusive Postsecondary Education

Although IPSE programs are available in almost every state and initial data on these programs indicate positive outcomes in employment and social/emotional development, many students with ID continue to miss this opportunity for a variety of reasons. Unfortunately, some students with ID do not consider IPSE due to poor transition planning and a lack of knowledge by school personnel regarding postsecondary options for students with ID (Griffin, McMillian, & Hodapp, 2010; Grigal et al., 2011).

Katsiyannis, Zhang, Woodruff and Dixon's work (2005) indicated that students with ID were less likely to have postsecondary education as a transition goal than students with a learning disability or an emotional/behavioral disorder, less involved in their transition planning, and more likely to report little or no progress towards achieving transition goals. In addition to reduced student involvement in transition planning, parents of students with an ID were also less involved in transition planning despite parent involvement being a requirement under the Individuals with Disabilities Education Act (IDEA) (U.S. Department of Education, 2017).

Griffin and colleagues (2010) reported that 26% of parents did not know that their young person's IEP included a transition plan, a direct contradiction to best practice. In this study, parents cited a lack of general information and guidance about PSE options and a failure of the school to help them understand as reasons why they were unaware. When asked about PSE as an option, most parents of youth with ID reported positive outlooks and expectations (Griffin et al., 2010). However, although parents of students with ID wanted their child to attend PSE, few believed or expected that it was possible (Grigal et al., 2013). Parents and students with ID should be aware of PSE programs as a viable option so they can explore these programs to make an informed decision.

School Psychologists as Facilitators to IPSE

School psychologists are in an ideal position to help students prepare for the transition after high school, as they are typically members of the transition team. School psychologists collect data through tests, rating scales, and observations that can be used to guide student success after high school as well as evaluate the appropriateness of potential placements. Good transition planning is outcome-oriented and focuses on specific steps that help the student reach his or her post-school goals (U.S. Department of Education, 2017). School psychologists can help facilitate good transition planning because they possess many skills in areas such as assessment, consultation, direct service, and program planning and evaluation (Skalski et al., 2015). In addition to

possessing these necessary skills, school psychologists are participants and (often) leaders in meetings with parents and other school personnel to discuss eligibility, IEPs, and prevention/intervention planning. School psychologists can facilitate access to and support student success in IPSE programs using the following recommended steps:

1. Identify and prepare prospective students. With their expertise in assessment and data collection, school psychologists are in a key position in identifying who qualify for IPSE. In order be eligible to attend an IPSE program, students must have an ID diagnosis. An ID is characterized by significant limitations both in intellectual functioning and adaptive behavior that affect many everyday social and practical skills. Diagnostic criteria generally include 1) intellectual functioning level (IQ) below 70-75, 2) significant limitations in adaptive skill areas as expressed in conceptual, social, and practical skills, and 3) a disability that originated before the age of 18 (American Psychiatric Association, 2013). Thus, school psychologists should be sure that a prospective IPSE student has a current diagnosis of ID.

Similar to other disabilities, characteristics of people with ID vary. For instance, a student with a relatively high IQ of 74 may currently possess very low adaptive skills. It is important to note that although students must have a diagnosis of ID, IPSE programs often have other minimum qualifications that relate to their particular program. Usually IPSE programs with on-campus housing require incoming students to possess basic adaptive skills, such as the ability to safely navigate to and from class, access the dining hall independently, and know how to ask for help if there is an emergency. Other IPSE program may expect that students have basic reading and mathematics skills. These criteria should be taken into consideration when identifying potential students.

Because IHEs normally do not accept IEPs as documentation of a disability, it is important that school psychologists provide up-to-date psychological and educational information (Whelley, Hart, & Zaft, 2002). Common scenarios related to assessment for individuals with ID who may be eligible for IPSE include re-evaluations for students already diagnosed with ID and evaluations of students who have yet to turn 18 and are suspected of having an ID. Reevaluations should take place during either Junior or Senior year of high school in order to be current as possible and should include a full-scale IQ score as well as a comprehensive analysis of current adaptive functioning across domains. If a student is below the age of 18 and suspected of having an ID (e.g., a student who previously identified under another IDEA category or a student who recently moved into the school system), a full-battery assessment that includes two individual measures of IQ as well as current adaptive functioning across domains is recommended. Also, in these cases, it is wise to document and gather as much information as possible previous educational experiences and supports in order to provide IPSE programs data to make an informed decision.

In addition to assessing IQ and adaptive functioning, a school psychologist can utilize tools that assess transition-related domains for students with ID. Examples of such tools are The Postsecondary Readiness Rubric v.3, Life Skills Inventory/ Independent Living Skills Assessment Tool, Personal Preference Indicators: A Guide for Planning, Supports Intensity Scale, Functional Independence Skills Handbook (FISH): Assessment and Curriculum for Individuals with Developmental Disabilities, and COPS-PIC: Picture Inventory of Careers. Resources such as these can help educators develop individualized postsecondary transition goals as well as assess a student's readiness to take on various career or educational opportunities after graduation. Details on access to these tools is provided in an appendix at the end of this article.

2. Promote empowerment. Regardless of whether a student appears to be a "perfect fit" for IPSE based on an updated psychological evaluation, the student must be actively involved in making the decision to apply for admission to an IPSE program.

As most school psychologists have been trained to recognize the importance of empowering students to direct their own lives and to be active participants in transition planning, they should use this training to actively promote student choice and decision-making in considering IPSE.

Self-determination refers to the idea that all people have the right to direct their own lives. This concept is particularly salient in transition planning, with the ability to take ownership in determining future goals and decision-making leading to a higher likelihood of being successful in the transition to adulthood (Bremer, Kachgal, & Schoeller, 2003; Wehmeyer & Schwartz, 1997). It is important to recognize that developing self-determination in students does not imply allowing total independence, but rather keeping an open-mind to interests and encouraging appropriate risk taking. To assess self-determination and identify strengths as well as areas of support, school psychologists can use the Arc's Self-Determination Scale, a self-report measure developed by Wehmeyer and Keichner (1995). Details on access to this tool are provided in an appendix at the end of this article.

In addition to self-determination, school psychologists should also be sure to incorporate person-centered planning in facilitating access to IPSE. Person-centered planning is an ongoing problem solving process used to empower and support people with disabilities in developing plans for their future, and is particularly effective and appropriate during transition planning (Michaels & Ferrara, 2006). In person-centered planning, the individual's gifts and aspirations are the primary consideration and focus of discussion. Benefits of person-centered planning are well documented (Claes, Hove, Vandevelde, van Loon, & Schalock, 2010); therefore, incorporating person-centered planning as a central component to transition planning should be considered best practice and school psychologists are well positioned to advocate for its use. Specifically, school psychologists should be proactive in informing students with ID and their families about IPSE and to promote their interest and pursuit of this option.

Not only do these approaches support students in making their own choices regarding IPSE, but they also promote development of critical life-long skills that can be used in various contexts. Furthermore, discovering areas of need related to transition and implementing interventions while in secondary school can result in students with ID being better prepared upon enrollment in an IPSE. By targeting a certain skill, such as knowing how to use an ATM machine or reading a bus schedule, school psychologists can promote student empowerment that will lead to successful adult outcomes.

3. Develop an action plan. Once prospective students with ID are identified and have expressed a desire to pursue IPSE, developing an action plan is the next step. An action plan should be constructed with the student, and, if possible, should involve other team members such as teachers, school counselors, vocational rehabilitation counselors, and family members. This plan will seek to answer fundamental questions such as: What are the student's interests when considering IPSE programs? Does he or she want to stay close to home or not? What is needed to complete the application process? What stakeholders should be involved? Is financial aid a possibility? Answers to these questions are usually contingent on one another; therefore, working through an action plan should be a gradual, sequential process. For example, if the student wants to attend an IPSE program out-of-state as opposed to in their home state, financial aid may be less available. Working through a plan of action will help contextualize attending IPSE and provide necessary information before decisions are made.

Based on information consolidated and provided by Kleinert, Jones, Sheppard-Jones, Harp, & Harrison (2012), the following are important factors to consider when developing your action plan: Students with ID may enroll in an IPSE program *without* a regular high school diploma and *without* passing entrance,

placement, or other "ability benefit" tests. Students with ID may be eligible for financial aid if they meet a financial means test and they maintain satisfactory academic progress, as defined by the IPSE program.

4. Propagate IPSE. Specific, targeted steps are important in helping to facilitate individual student access to IPSE programs, but there are also actions that school psychologists can take to address universal barriers to access. These actions represent efforts at the systems, school and person level. In order to increase student interest in IPSE participation, schools must begin by building awareness of IPSE options along with providing information on basic programming and transition components. Data indicate that a general lack of awareness of IPSE (Grigal et al., 2013) and a lack of information provided by high school staff (Griffin et al., 2010) are substantial barriers to IPSE access. Because school psychologists typically interact with various staff members in multiple schools, they are in a position to promote IPSE awareness with many educators. Moreover, a school psychologist can have impact across multiple schools within a system even if he or she is not assigned a specific high school by communicating to fellow school psychologists and other school personnel regarding the benefits of and application processes for IPSE admissions. From a systems-level perspective, school psychologists can talk to principals and central office administrators to implement universal interventions to make sure *all* students are aware of the range of opportunities for education after high school. Providing information about IPSE in a variety of forums, such as putting up posters in the school, having an IPSE meeting during lunch, or including IPSE programs in transition fairs, are powerful actions to promote awareness.

Another way in which school psychologists can have a direct impact on the likelihood of IPSE participation at a school level is to consistently discuss IPSE programming for all students with ID as part of their transition goals. Evidence suggests that including an expectation for PSE and paid employment as part of students' postsecondary goals regardless of their disability label is associated with improved outcomes (Grigal et al., 2011). Despite these findings, many transition plans do not include these important components indicating a need for improvement in transition service planning for students with ID (Grigal et al., 2011).

From an individual perspective, school psychologists can talk directly to students and parents about IPSE informally during testing as well as during IEP/Transition planning meetings. These conversations should promote confidence in the student's potential while also recognizing the support needed to optimize outcomes. Lastly, on an individual level, it is important to talk to other staff members including teachers, special education coordinators, and transition specialists. In the past, there were limited opportunities for education and training beyond high school for students with ID, and many school personnel may be unaware of the range of options currently available including IPSE (Cook, Hayden, & Wilczenski, 2014).

Finally, school psychologists can promote the development of core skills that can promote better readiness for IPSE program enrollment and success. For instance, promoting self-determination skills in students with ID as early as elementary school may lead to a higher level of IEP participation in high school, leading to students who are better prepared to enroll in and be successful in IPSE programs. In these ways, school psychologists can promote IPSE awareness and readiness from an individual as well as a systems-level perspective.

Future Directions

Adult outcomes for persons with ID are often bleak with unemployment or underemployment, limited social opportunities, and reduced quality of life experienced by a large subgroup of adults with ID. As outlined by HEOA, students with ID now have an opportunity to attend IPSE programs. Access to

higher education is important as a civil right, and it also can lead to significant positive outcomes across multiple life domains. Although IPSE is a relatively new initiative, initial evaluation data reinforce its effectiveness and impact—program completers are more likely to work in a job that they are passionate about, earn more money, and be more independent and self-determined.

Additional research and evaluation studies are needed to understand the short- and long-term impact of participation in IPSE programs. Moreover, additional research may demonstrate the collateral benefits of these programs on campus climate, accessibility, and faculty and peer attitudes. To prepare their graduates to support IPSE, school psychology graduate programs need to ensure familiarity with these programs and provide coursework and applied experiences in applicable practice domains (e.g., self-determination and transition assessments). Moreover, as more IHEs establish IPSE programs, school psychologists may be uniquely positioned to work as program coordinators and staff members. School psychologists have skills in a variety of domains—consultation, assessment, program evaluation, and developing intervention plans—that could support students with ID as they gain access to college and universities across the nation.

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Appendix A

Transition and Self-Determination Resources

- COPS-PIC: Picture Inventory of Careers:
  - Transitioncoalition.org Tools Assessment Reviews
  - Direct link- https://www.career-lifeskills.com/copsystem-24/cops-pic-118/cops-pic-picture-inventory-of-careers-combined-test-booklet-and-answer-sheet-11-1202.html
- Functional Independence Skills Handbook (FISH): Assessment and Curriculum for Individuals with Developmental Disabilities:
  - Transitioncoalition.org Tools Assessment Reviews
  - Direct link- http://www.proedinc.com/customer/ProductLists.aspx?SearchType=All&SearchWords=Functional+Independence+Skills+Handbook+%28FISH%29%3a+Assessment+and+Curriculum+for+Individuals+with+Developmental+Disabilities&SearchWordModifier=All&CategoryID=0
- Life Skills Inventory/Independent Living Skills Assessment Tool:
  - Transitioncoalition.org Tools Assessment Reviews
  - Direct link- http://www.sped.sbcsc.k12.in.us/PDF%20Files/tassessments/Independent%20Living/Life%20Skills%20Inventory_Independent%20Living.pdf
- Personal Preference Indicators: A Guide for Planning:
  - Transitioncoalition.org Tools Assessment Reviews
  - Direct link- http://www.ou.edu/content/dam/Education/documents/personal-preference-indicator.pdf
- Postsecondary Readiness Rubric v. 3:
  - Go to thinkcollege.net Home Find a Resource Transition Search
  - Direct link- http://www.thinkcollege.net/administrator/components/com_resdb/files/Post%20Secondary%20Readiness%20Rubric%20v3%20final%20whole.pdf
- Supports Intensity Scale:
  - Transitioncoalition.org Tools Assessment Reviews
  - Direct link- http://aaidd.org/sis#.WMn-BasydUS
- The Arc's Self-Determination Scale (Adolescent Version):
  - Direct link to Scale- http://www.thearc.org/document.doc?id=3670
  - Direct link to Procedural Guidelines http://www.beachcenter.org/education_and_training/self-determination/default

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Best Practices for Supporting Upward Economic and Social Mobility for First-Generation College Students

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First-generation college students tend to be academically underprepared, report psychological distress throughout their collegiate experiences, and are at increased risk for leaving college without a degree compared to students with at least one parent who has attended some college or earned a college degree. However, these students come from varied cultural and linguistic backgrounds and increase cultural capital in our university systems. Improving retention and graduation rates for first-generation college students requires careful attention to their unique needs during their transitions to and from secondary school in order to help them integrate into the university system. The purpose of this paper is to discuss best practices for school psychologists in postsecondary education to address the specific academic, social, and psychological challenges faced by this underrepresented group of students.

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The phrase "first-generation" has generally been used to describe a college student whose parents' highest level of education was less than or equal to a high school diploma (Czyzewska & McKenzie, 2016; Wine, Janson, & Wheeless, 2011). Nationwide, approximately 35.8% of incoming freshman were first-generation college students during the 2003-2004 school year (Wine et al., 2011). As a group, these students share different demographic characteristics than traditional college students. Less than half of first-generation college students are ≤ 18 years of age compared to nearly three quarters of non-first-generation college students (Nuñez & Cuccaro-Alamin, 1998). First-generation college students also tend to be female, married, have dependents, and belong to an ethnic minority group (Chen, 2005; Ishitani, 2006; Nuñez & Cuccaro-Alamin, 1998; Saenz, Hurtado, Barrera, Wolf, & Yeung, 2007; Terenzini, Springer, Yager, Pascarella, & Nora, 1996), thereby contributing diverse experiences and ideas to college campuses.

Unfortunately, high school graduates whose parents did not enroll in college are less likely to enroll in college themselves (Chen, 2005). First-generation college students are also more likely to leave college without a degree compared to their non-first-generation peers (Chen, 2005; Choy, 2001; Nuñez & Cuccaro-Alamin, 1998). This is especially true during their second year. Specifically, Ishitani (2006) estimated that college students who are first-generation are 8.5 times more likely to drop out of college in year two than students whose parents graduated from college. First-generation college students, as a group, also tend to share characteristics that increase their risk for leaving college without a degree. For example, they are more likely to come from low-income families (Chen, 2005; Ishitani, 2006; Nuñez & Cuccaro-Alamin, 1998; Terenzini et al., 1996) and they are less likely to take advanced mathematics courses in high school or take and score well on college entrance exams (i.e., Scholastic Aptitude Test [SAT] or American College Testing [ACT]; Chen, 2005; Choy, 2001). In addition, first-generation college students tend to begin their postsecondary education at a community college, attend college part-time or discontinuously, and are more likely to delay college entry after graduating from high school (Chen, 2005; Hines, 2014; Ishitani, 2006).

Significantly fewer students who aspire to earn a bachelor's degree meet their goal when they shared these risk factors according to nationwide data collected from the Postsecondary Education Transcript Study. Specifically, 52.3% of students whose annual family income was less than $25,000 earned a bachelor's degree compared to 81.9% of students whose annual family income was greater than or equal to $75,000. Moreover, 30.2% of students whose highest level of mathematics coursework in high school was Algebra I earned a bachelor's degree compared to 82.8% of students who stopped at Calculus or Pre-calculus; and, slightly less than half of high school students who earned scores on college entrance exams in the lowest quarter obtained a bachelor's degree compared to 85.7% of high school students who earned scores in the highest quarter. It was also indicated that 55.4% of students who first enrolled at a community college earned a bachelor's degree compared to 71.1% of students who started a 4-year institution. Likewise, 19.4% of students who attended college discontinuously earned a bachelor's degree compared to 80.4% of students who attended college continuously; and, 34.1% of students earned a bachelor's degree when they delayed college entry by more than one year compared to 69.9% of students who enrolled in college less than one year after graduating high school (Chen, 2005).

Despite these differences, first-generation college students value higher education as a way to achieve financial stability and provide better opportunities for their children (Nuñez & Cuccaro-Alamin, 1998; Saenz et al., 2007). However, there is some evidence that first-generation college students and non-first generation college students enroll in

higher education with different degree aspirations. Terenzi et al. (1996) reported that significantly fewer first-generation college students indicated intentions to seek advanced degrees over the course of their lifetime (i.e., master's or doctorate degrees) than non-first-generation college students. This difference may explain some variation in income. Nevertheless, earning a college degree has been commonly established as a significant predictor of employment status with the lowest rates of unemployment observed for individuals with a bachelor's degree or higher according to a 2015 report published by the *Bureau of Labor Statistics*. Moreover, first-generation college students who earn a college degree land similar jobs and earn comparable salaries to non-first-generation college students (Nuñez & Cuccaro-Alamin, 1998). Gainful employment has also been identified as a protective factor for healthy psychological adjustment and physical well-being (McKee-Ryan, Song, Wanberg, & Kinicki, 2005).

Improving retention and graduation rates for first-generation college students may, therefore, be a powerful means of upward economic and social mobility for this underrepresented group (The College Board, 2005). However, doing so requires thoughtful identification of the unique needs of these students. As a result, the purpose of this paper is to identify the specific academic, social, and psychological issues that these students face and to propose best practices for school psychologists in postsecondary education.

Preparing for College: Academic Readiness and Postsecondary School Success

Improving retention and graduation rates for first-generation college students is a complex problem. Risk factors, alone, do not tell the entire story. First-generation status has been demonstrated to predict college dropout even after controlling for differences in demographic characteristics, academic preparedness, enrollment status, designated major, and postsecondary performance (Chen, 2005; Ishitani, 2006). This suggests that interventions targeting any single risk factor as an isolated event may grossly oversimplify the problem and produce null results. Furthermore, the gap between first-generation college students and their non-first generation college student counterparts on retention and graduation rates may be better explained by individual differences in how first-generation students experience the additive impact of combinations of risk factors. For example, Richardson, Abraham, and Bond (2012) reported medium to large correlations between performance self-efficacy (ρ = 0.67), high school grade point average (GPA; ρ = 0.41), A level points (ρ = 0.31), SAT scores (ρ = 0.33), ACT scores (ρ = 0.40), academic self-efficacy (ρ = 0.28), setting minimum grade goals (ρ = 0.49), and effort regulation (ρ = 0.35) with college GPA in a meta-analysis of 217 studies on psychological correlates of university students' academic performance across Europe and North America. They also reported that academic self-efficacy, effort regulation, and setting minimum grade goals significantly predicted college GPA regardless of students' high school GPA and SAT scores. In other words, students' belief in their own academic abilities ("I am good at math!"), persistence when faced with academic challenges ("I can do better next time by studying differently."), and their own standards for their grades in college ("I will maintain a 3.0.") contributed more to postsecondary success than whether or not they performed well in high school.

Unfortunately, first-generation college students tend to report lower academic self-confidence, in general, and specifically in relation to mathematics and writing compared to non-first-generation college students (Saenz et al., 2007). This difference in perception may magnify actual differences in academic skills. Differences in academic skills may also be explained by a lack of educational opportunity. For instance, Horn and Nuñez (2000) reported that 70% of parents with a bachelor's degree or higher recalled that they encouraged their adolescents to take Algebra in eighth grade, compared to roughly half of

parents with no postsecondary education. However, it has been documented that first-generation college students who took rigorous coursework in high school (i.e., biology, chemistry, physics, four years of mathematics, three years of foreign language, and at least one honors/Advanced Placement course) were significantly more likely to complete a college degree than those who did not (Warburton, Bugarin, Nuñez, & Carrol, 2001).

The latter issue is particularly problematic because parental expectations are among the most influential factors in high school students' postsecondary education plans (Hossler & Stage, 1992). Parents of first-generation college students are less likely to report that they discussed SAT/ACT preparation or plans to attend college with their adolescents during their senior year of high school, attended programs on postsecondary education opportunities, sought information about financial aid for college, or made at least one college visit compared to parents with at least some postsecondary education (Choy, 2011; Terenzini et al., 1996). Though, first-generation college students are increasingly noting parental encouragement as the reason for their pursuit of a college degree (Saenz et al., 2007).

It is critical that school psychologists be aware of these inadvertent educational pathways that first-generation college students, as a group, tend to trail. Best practices involve developing a specific transition plan for students entering and exiting secondary school whose parents' did not attend college or complete a college degree. Effective transition planning for these students requires identifying a variety of discrete activities that target academic, procedural, and social concerns as well as activities that meet the needs of parents (Cauley & Jovanovich, 2006; Mac Iver & Epstein, 1991; Petty, 2014). For example, a middle school transition team may facilitate meetings with high school guidance counselors and/or administrators to gain information about academic programs and course offerings to address academic concerns (Mizelle & Irvin, 2000; Shoffner & Williamson, 2000) or invite middle school students to shadow high school students and tour the high school campus to address procedural concerns (Shoffner & Williamson, 2000). Activities targeting the social concerns of middle school students might include a question and answer panel of high school students (Allen, 2001; Mizelle & Irvin, 2000). Finally, arranging a conference between middle school students, their parents, and the guidance counselor could be an effective transition activity for parents to introduce them to the academic and social environment of high school (Mizelle & Mullins, 1997).

Navigating the University System: Academic and Social Integration

As a group, first-generation college students place high importance on receipt of financial aid, the ability to complete coursework quickly, living at home throughout college (Saenz et al., 2007), and maintaining part-time or full-time employment simultaneously while attending school in selecting their postsecondary institution (Nuñez & Cuccaro-Alamin, 1998). They are also more likely to live and be employed off campus and they tend to complete fewer credit hours during their first academic year compared to their non-first-generation counterparts (Pike & Kuh, 2005; Terenzini et al., 1996). Consequently, they may have difficulty integrating into the university system compared to students who do not share these competing considerations. Academic integration refers to the "assimilation of the student into the *academic life* [emphasis added] of the college" (Próspero & Vohra-Gupta, 2007, p. 966) and social integration refers to the "the assimilation of the student into the *social life* [emphasis added] of the institution" (Próspero & Vohra-Gupta, 2007, p. 966).

The degree to which first-generation college students integrate into the university system within their institution of higher education significantly predicts college GPA (Eimers & Pike, 1997; Próspero & Vohra-Gupta, 2007). Consequently, best practices

for school psychologists in postsecondary education involve assisting first-generation college students with academic and social integration. Swecker, Fifolt, and Searby (2014) reported that the number of times first-generation college students met with their advisor significantly predicted college retention. Specifically, the odds that a student would be retained the following semester increased by 13% each time students met with their advisor. This simple intervention targeting academic integration can be put into place to increase retention rates for first-generation college students.

Yet, first-generation college students often come from culturally and linguistically diverse backgrounds and forming meaningful relationships with university faculty may prove challenging when differences in background experiences and communication styles between students and faculty are not acknowledged (White & Ali-Khan, 2013). Stephens, Townsend, Markus, and Phillips (2012) reported significant increases in cortisol and psychological distress for first-generation college students in the presence of a cultural mismatch between students and the universities in which they were enrolled, lending support to this notion. First-generation college students also report significant guilt associated with pursuing a college degree and surpassing the achievements of family members (Covarrubias & Fryberg, 2015), which has been associated with depressive symptoms and low self-esteem (Covarrubias, Romero, & Trivelli, 2015). Moreover, first-generation college students tend to rate themselves as having under-developed leadership abilities compared to their non-first-generation peers (Saenz et al., 2007) and they are less likely to participate in campus-based extracurricular activities (Terenzini et al., 1996).

Nevertheless, Stephens, Hamedani, and Destin (2014) demonstrated in a randomized controlled trial that participating in a one-hour question and answer panel of college seniors (i.e., three first generation students and five non-first generation students) as an audience member significantly increased the degree to which first-generation college students' sought out their professors for help when panelists highlighted how their diverse backgrounds shaped their college experiences. In addition, students in the intervention condition reported significantly less psychological distress and perceptions of social-identity threat, better psychological adjustment, more academic and social engagement, and higher end-of-year GPAs compared to participants in the control condition. Significant improvements in first-generation college students' cumulative GPA and spring re-enrollment have also been reported for interventions involving a first-year seminar offered during students' first semester (Vaughan, Parra, & Lalonde, 2014).

Likewise, significant improvements in first-generation college students' self-reported academic and professional skills, critical consciousness, resilience to challenging situations, self-reflection, and course exam performance have also been exhibited from participation in service-learning courses or courses that emphasize active learning (Eddy & Hogan, 2014; Pelco, Ball, Lockeman, 2014; Yeh, 2010). Consequently, best practices for school psychologists in postsecondary education require the deliberate inclusion of strategies for improving first-generation college students' successful integration into the university system within the college curriculum.

Other campus-wide supports are also available at many postsecondary institutions as additional resources for first-generation college students. For example, there are multiple colleges designated as Hispanic Serving Institutions by the U.S. Department of Education which offer extended supports. For the purposes of this article, the initiatives of one such institution that boasts an enrollment of nearly 29,000 with 48% of students characterized as first-generation is reviewed. At this institution first-generation college students as well as others with an academic need are eligible to participate in a student support services program that offers academic support and guidance, workshops (e.g., navigating graduate school, financial literacy, financial aid assistance, and career services),

opportunities for campus engagement, social enrichment activities, special computing use, mentoring, and other programs designated specifically for freshman. The college also supports a "First to Go and Graduate" initiative specifically targeting first-generation college students. The "First to Go and Graduate" initiative uses peer mentors, faculty coaches, and advocates (i.e., "first-gen champions" comprised of university faculty and staff who were the first in their nuclear families to graduate from college) to increase retention and graduation rates of first-generation college students. The "First to Go and Graduate" initiative also includes prepare, inspire, validate, orient, and transition (PIVOT) programs supported by the U.S. Department of Education, Title V, to increase the number of first-generation, Hispanic students coming from low socio-economic backgrounds who graduate with a bachelor's degree.

Similarly, mental health services are also offered on many college campuses. This may include university-based counseling centers funded through student service fees staffed with licensed therapists and graduate training clinics that serve college students in addition to members of the local community pro bono or on a sliding fee schedule. Best practices for helping first-generation college students integrate into the university system also involves helping these students identify the resources already available to them on campus.

Conclusion

Students whose parents did not complete a college degree are an underrepresented group within institutions of higher education. As a group, first-generation college students tend to be academically underprepared (Chen, 2005; Choy, 2001), report psychological distress throughout their collegiate experiences (Covarrubias & Fryberg, 2015; Covarrubias et al., 2015; Stephens et al., 2012; White & Ali-Khan, 2013), and are at increased risk for leaving college without a degree (Chen, 2005; Choy, 2001; Nuñez & Cuccaro-Alamin, 1998) compared to students with at least one parent who has completed some college or obtained a college degree. However, these students come from varied cultural and linguistic backgrounds and increase cultural capital in our university systems (Chen, 2005; Ishitani, 2006; Nuñez & Cuccaro-Alamin, 1998; Saenz et al., 2007; Terenzini et al., 1996). Improving retention and graduation rates for first-generation college students requires careful attention to their unique needs during their transitions to and from secondary school in order to help them integrate into the university system.

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An Unconventional Collaboration at the College Level to Improve STEM Student Success

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The purpose of this article is to illustrate the work that has resulted from a collaboration between a biology professor, a school psychology professor, a researcher in higher education access, and the writing programs director. The essential school psychologist role, as classroom observer and data analyzer, is discussed through an example of work done as part of a larger project focusing on student success and retention for at-risk populations in introductory college biology courses. Best practices for consulting at the college level are discussed and include: collaborate to cultivate the willing, collect and analyze data to sustain instructor involvement, and communicate and advocate. We hope that the model exemplified here might inspire future interdisciplinary collaborations that draw on school psychology expertise to design and conduct research.

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Introduction

In the summer of 2014, the last author observed that the students in his unexpectedly low-enrolled Introductory Biology course received overall higher grades than students in the larger classes that he was used to teaching both in the summer and during the regular academic year. As a scientist, he found this phenomenon interesting and decided to put a team of researchers together to validate whether or not his perceived observations were true. He reached out to the then Dean of the School of Education, and she sent a message out to the faculty. Within the School of Education it was decided that two researchers, one with primarily qualitative expertise and one with quantitative expertise, would best serve to assist with this project. Additionally, this biology professor reached out to the Writing Programs Director to examine if integrating more writing into his class would improve students' critical thinking, and he also reached out to the university Assessment Director for input on ways to evaluate his students' learning. Thus, a seemingly unlikely cross-disciplinary partnership was born between this biology professor, a school psychology professor, a researcher in higher education access, and the writing programs director.

Although the original research question was related to class size, once all the collaborators were gathered, it was clear that this issue was larger than just class size. One question led to another question in a very organic, yet systematic way. In our first semester working together, we tackled the class size issue. In doing so we compared a small class (24 students) and a larger class (80 students) and attempted to ensure that as many factors (e.g., course content, course time of day, same professor) as possible were held constant. We found that that the smaller class both outperformed and was more engaged in class than the larger class, (Scott, McNair, Lucas & Land, 2017). This led us to attempt to understand more deeply factors associated with high attrition and failure rates in introductory biology courses. More importantly, we wanted to explore what kinds of interventions could disrupt those negative trends. Although each of us has our unique role in the on-going project, we are all dedicated to improving retention and graduation rates of underrepresented college students, so more recently we focused exclusively on at-risk students. Therefore, the purpose of this article is to provide a description of this unconventional collaboration, to offer an example of the type of work that has resulted from this collaboration, and to discuss best practices for the school psychologist consulting at the college-level, all learned as a result of this experience.

School psychologists have long been trained in individual and systems consultation and have traditionally consulted with others (i.e., teachers, parents, administrators) in the K-12 school system (Anton-LaHart & Rosenfield, 2004; Barrett, Hazel & Newman, 2017; Reschly & Wilson, 1995). Although trained in consultation, faculty in school psychology programs may fail to consider collaborating with peers at the college or university level. Yet through consultation and collaboration, school psychologists can assist teachers at all levels to use effective instructional processes, including more active learning techniques. School psychologists can build in accountability structures by tracking student and instructor improvement through classroom observation and by providing ongoing feedback based on collected data. School psychologists can also evaluate the effectiveness of programs and make recommendations for change.

Science, Technology, Engineering, and Math (STEM) disciplines have long suffered from high attrition rates and low student success (Chen, 2013; Hannauer & Bauerle, 2012). Given the strong pressure on colleges and universities in the United States to generate more STEM graduates, addressing these concerns over high attrition rates and improving outcomes is imperative and urgent. As noted above, one of the core questions that we tried to address through our collaboration was about the retention rate

of students in introductory biology classes. These classes are often viewed as gatekeepers into medical professions such as pre-med, pre-dental, and other health sciences. They are often lecture-based and designed to "weed students out." Although some might call this a noble function to ensure only the "fittest" enter medical fields, others would observe that there are students who may be quite capable but are simply underprepared. These students (such as first-generation college students or students from historically marginalized populations) may be at-risk for failing these introductory courses but could thrive if pedagogical structures and approaches could be adjusted to optimize student success. These adjustments entail a shift in traditional science-course culture. Therefore, a multidisciplinary approach is likely to yield the most effective solutions because it can operate outside of "the box" (of traditional norms), and to achieve these solutions multiple stakeholders need to collaborate effectively. Such a collaboration allowed us to identify possible factors stifling STEM student success and to help transform introductory biology courses to include more active learning strategies and make lectures more relevant to students' lived experiences.

In addition to encouraging the professor to experiment with teaching methods beyond the traditional lecture-based approach (using more writing to reinforce, extend, and synthesize student learning; techniques of active learning, reflective practice, and transparent teaching), outside observers (assessment director, writing center director, and school psychology graduate student observers) helped him to become more mindful of his assessment of student learning, such as the format of exams and also the activities his students were engaged in during class time, including on-task or off-task behaviors. As mentioned previously, initially we compared the data from a small class and a large class that were held in the same semester. Results suggested that class size had a significant impact on student success and students in the small section out performed students in the large section and were overall more on-task during class time (Scott, et al., 2017); however, we knew securing small sections for all students was unrealistic. Therefore, we decided to focus subsequent collaborative research work on students who most needed help.

Creating the optimal conditions for student success is important for effective teaching. School psychologists often assist in designing conditions where individual students with behavioral or learning challenges can thrive. Higher Education researchers Chickering and Gamson (1987) described seven high-impact educational practices to optimize student engagement which include: student-faculty contact, active learning, prompt feedback, emphasis on time on task, high expectations, respect for diverse learning styles, and cooperation among students. These are perhaps optimized by small class size, and the collaborators often had discussion of these factors. Kuh (2008) adds writing as another high-impact practice for activating student engagement and improving retention. Class size also was a factor here, given that we had to consider instructor workload issues. Each of these practices were incorporated into the fourth author's biology classes. We were able to illustrate the value of these changes because the school psychologists involved in the study were able to collect classroom observation data on active learning/ student engagement. Such is the essential role school psychology practitioners can play in cross-disciplinary research. Although many research questions were asked as part of the larger project, we specifically wanted to know if active engagement in class differed between the small classes (at-risk and traditional) and one large section during the two semesters of data collection and if subsequent academic outcomes differed between the classes. Given that we believed all students benefitted from small classes, we wanted to determine whether, given limited departmental resources, it was worth investing in creating smaller sections for at-risk students. In other words, we hoped to learn whether strategic investment in small sections

for at-risk students, coupled with pedagogical interventions, were powerful enough to ameliorate the disadvantages bourn by the group.

School Psychologist's Role in Collaboration

Method

Participants. Students in two small sections and one large section of one instructor's introductory biology course participated in the study described here. Each small class was capped at 24 students and the large class had 80 students. During the first semesters of the study for which the data for the large class and one of the small classes was collected, students self-enrolled in the introductory biology section of their preference, with some students clearly selecting a smaller class. One student dropped the small section and one student did not complete the course. This small section became the comparison sample for the study described here (comparison small section; CSS). During the same semester, data on the comparison large section (CLS) was also collected. Ten students did not complete the large section. Both large and small sections in this initial sample were heterogeneously mixed based on student demographics. However, during the fourth semester of the study, students were selected to participate in a smaller section based on their at-risk status, e.g., having previously failed the course (at-risk small section; ARSS). There were a total of 20 students enrolled in this small section. No students dropped the course and all students completed the course.

Procedure. Students either enrolled in the biology section of their choosing (first semester of data collection) or were placed in the at-risk section (fourth semester of data collection). During the first semester of data collection multiple sections of the course were offered by a variety of professors, but only the data collected for one professor is analyzed for this study. In order to be as consistent as possible the same professor taught the large and small sections for which the data is analyzed. His classes were offered on a MWF schedule from 11:00-12:15 (CSS) or 12:30-1:45 (CLS). This was done in order to minimize selection bias on the part of the students (i.e., neither section was offered at 8am). The biology curriculum is pre-determined, and all faculty that teach the sections must cover the same material, use the same texts, and maintain roughly the same pace. Students also attend separate lab sections that cover predetermined material. For the instructor for which data was collected, graduate student observers noted the content of the course to verify consistency over time. The observers also noted that the professor was as consistent in other ways, often telling the same jokes, asking the same questions, and using the same activities, etc. The only difference noted by the observers, as would be expected, is that in the smaller classes all students were likely be called on to participate during a class, as compared to in the larger section, because the same amount of time was allowed for each teaching activity in each class. Also, over time, the instructor became more aware of optimal teaching methods and was more likely to be using them more consistently by the fourth semester as compared to the first semester. The instructor also knew that the students in the at-risk group were considered at-risk, and this may have made him even more mindful to call attention to specific study skill techniques or offer colorful anecdotes designed to reduce student anxiety. Still, the course content was still the same in the first and fourth semesters. Data collected both semesters included observational data collected by a graduate student in school psychology and the final course grades.

The graduate student conducted observations throughout the semester (approximately once a week and never on exam days). A modified version of the Behavioral Observations of Students in Schools (BOSS; Shapiro, 2011) was used to observe students in the classroom. The definitions of the observation categories were retained for the observation with the BOSS, including active engagement, passive

engagement, off-task motor, off-task verbal, and off-task passive. Two modifications were made. Rather than observing a single student, all students were observed for successive 15-second intervals, such that each student was observed before starting over with the first student again. Also, only momentary intervals were used such that the student was observed at the end of the 15-second interval and the behavior they were engaged in was recorded. This data was then analyzed using an Analysis of Variance (ANOVA). The final course grade data was analyzed using non-parametric tests, as appropriate.

Results

Observational Data. A series of one-way ANOVAs comparing class means for active and passive engagement, as well as off-task behaviors divided into off-task motor, off-task verbal, and off-task passive behaviors were conducted to determine if such behaviors were significantly related to class-size. Given our focus on active engagement those results will be discussed here, though it should be noted that ANOVA results for all five behavioral categories followed similar patterns. The overall ANOVA for active engagement was significant, $F(2,17) = 7.87$, $p = .004$, indicating that percent of time spent actively engaged in class were different for the small and large classes. Subsequently, Tukey HSD post-hoc analyses revealed that students in the at-risk small section (ARSS) were not significantly more or less actively engaged in class as compared to the comparison small section (CSS), as follow-up tests did not yield significance. However, both small sections (CSS & ARSS) were significantly more engaged than students in the large section (CLS).

Final Grades. We also found that students in the at-risk small section (ARSS) performed similarly compared to the comparison small section (CSS). For both the CSS and the ARSS group, no students failed the course. However, no students earned As in the at-risk group (ARSS). Using Fisher's exact test, the proportion of students who received a C- or better compared to students who received a D+ or lower (neither class had any Fs) was not significant, $p = 1.0$.

Discussion

We found that compared to the initial self-selected group of students in the small section (CSS), students in the small section in the at-risk group (ARSS) were similarly engaged. This is important because one might assume at-risk students would be *less* engaged with the course, especially if they had failed the first time. Interestingly, this level of engagement existed in spite of the fact that the at-risk small group did not achieve at the level of the self-selected small group (CSS). In other words, average grades were lower for the at-risk group, but the small class size and possibly the more adept use of active learning techniques on the part of the professor seemed to mitigate the potential decrease in engagement/motivation that this cohort might otherwise experience. However, they all passed the course the second time while in the smaller group. These research findings reported here combined with other findings (Scott, et. al., 2017) have now led to in-depth discussions within the biology department about how to better improve the experiences of at-risk students. Using data to drive conversations can allow for informed decision making. This unconventional collaboration, and the data collected, opened the door for this conversation.

Limitations and Future Directions. We acknowledge that there are limitations in our study. The data collected for this study is from the students from one instructor for introductory biology classes at a small to mid-size private university. In the future we plan to compare the results of students from this instructor to the results of students from other instructors at this university and also at other universities (another small private and a large public). Therefore, at this time this data may not be generalizable to all introductory biology courses at the university/college level.

Additionally, as time has progressed, the instructor has been transformed into a more self-aware instructor who purposely uses active learning strategies and writing strategies to engage critical thinking in his courses. Therefore, as time has progressed it is likely that the classroom climate and other factors that we did not originally plan to measure have improved the classroom experience for the students. The at-risk section may not have had the same experience as the students in the comparison small section, even though we can confirm that the content and activities were largely the same.

Best Practices for Consulting at the College Level

Collaborate to Cultivate the Willing

School psychologists may not be uniquely positioned to collaborate with other departments at the college or university level, as the observations and data analyses conducted are not unique to school psychology and may be conducted by educational psychologists or other education researchers. However, at a small to mid-size private university, school psychologists may be the best positioned to assist with this type of research, depending on the programs offered by the university or college. School psychologists can impact course design for students in college through these collaborations. The largest reward has been collaborating with a faculty member who found theories about optimizing student success fascinating and who was willing to abandon the traditional lecture for more active engagement in the classroom. Through collaboration, a variety of teaching strategies were discussed, and the biology professor had support to implement changes in the classroom designed to benefit all students in the classroom, including at-risk students. Given that most STEM faculty are not trained on pedagogical best practices during graduate school, collaboration among different disciplines can help to introduce high impact and best practices to faculty members who may teach at-risk students.

There continues to be ongoing consultation with the biology department in order to try to infuse best practices throughout all of the introductory courses, not just the sections delivered by the professor involved in the project. This will take time, as all change does. Right now we have a willing participant, and we are willing to continue our work. Having collected and analyzed data has also helped leverage conversations with the higher administration to help reduce class sizes for students who are at-risk.

Collect and Analyze Data to Sustain Instructor Engagement

The main role of the school psychologist in this project is to analyze the quantitative data collected during the study. Based on results of data collected, we have been able make meaningful changes to the biology course through the help of the instructor. As a scientist, he Land reports that the data has been very helpful in allowing him to see the value of his efforts to make these changes and to support his students. In short, the numbers illustrate precisely the impact of the time and energy he has invested in his course, thus sustaining his motivation for continued efforts. Further, because we analyzed data both during the semester and at the end of each semester, changes could be made in real-time as well as for the subsequent semester based on the results. He has reported that with each change - and then with subsequent data to support the change - he has been energized and invigorated to keep these changes in his classes, despite skepticism from his colleagues that he may not be “weeding out” enough students by using these non-traditional teaching methods.

Being able to use a modified version of the BOSS allowed us to quantify active engagement in the classroom. This was crucial and important, as having trained observers from the school psychology program available to observe in the biology classroom

functioned as independent observers. Without this expertise, we might have been left only with the "feeling" that students seemed more engaged. With the BOSS we could confirm that was exactly what was happening. Additionally, school psychology graduate students were able to see the effects of ongoing program evaluation. Involving graduate students in this collaboration helped model to them the kind of work with which they might be involved in the future.

Communicate and Advocate

Most rewarding has been the fact that our results have helped us engage in the kind of consultations school psychologists are trained to participate in. We advocated for identifying at-risk students and providing additional support to better ensure their success (e.g., small classes, use of active learning techniques, etc.). Given the overall better performance of students in the smaller classes, we were able to advocate for at-risk students to be hand-selected to enroll in the smaller class section during the fourth semester of the study (ARSS). Although the data on this class section is limited (relying only on one semester), and based on a small sample size, the results are encouraging. All students in the smaller section who were retaking the course because they had failed it the first time were able to pass the class the second time. Although students in this group (ARSS) did not get As and had more Cs as compared to students from CSS group, they were able to pass the course likely because they did not receive "more of the same" but truly received "something different" (Abbott, Wills, Greenwood, Kamps, Heitzman-Powell & Selig, 2010). Passing the course allowed these students to continue to progress in their majors, saving time and costs associated with their time-to-degree.

We continue to consider how we might better support and advocate for students, particularly at-risk students. We know that small classes in-and-of themselves are not likely sustainable. However, we are considering how we might better support students early when we notice they are not doing well in courses, practices currently under consideration include the use of on-line learning communities or of teaching assistants for the course who could hold evening office hours in the library where students often study, requiring a stipulated number of visits to office hours (of the TA or professor).

School psychologists should not be afraid to share their knowledge of effective teaching practices at the college level. As we know, the qualifications for teaching at the university level is an advanced, terminal degree, but professors outside of education/ educational psychology departments often do not have much knowledge of effective teaching strategies and they rely on teaching the way they were taught. Although school psychologists may sometimes take their specialized knowledge for granted, it is important that school psychologists share their knowledge at all levels of education.

We also suggest having a plan for communicating findings at all levels: within the department(s), at the university level, within the higher education community and to the wider community. Initially the collaborators brought into this project did not necessarily think about ways to share the results of this project outside of the biology community. However, since this project began, many, including deans and the provost, have become very interested in our work. We have communicated our findings within the campus community, including at the annual Summit on Writing in the Disciplines, which has subsequently helped in terms of internal funding support the project. We have also communicated our findings to the academic community by presenting at a variety of academic conferences and have published aspects of our findings in academic journals.

Conclusion

Although the original study began by examining class size at the university, our recent focus has become effective teaching strategies for at-risk

students. We found ourselves advocating for research-based factors that promote success in learning at the higher education level (e.g., smaller class sizes, active learning strategies, etc.). School psychologists have the knowledge and skills that translate well to the college environment. Examining practices in post-secondary education is very similar to practices used in K-12 schools but is often under-utilized. At all levels, collecting and analyzing observational and other quantitative data are useful to teachers. Strategies for increasing active student engagement, class size issues, and retention of students (or the cost of repeats) are discussions at all levels of education. Our unconventional collaboration may represent a new paradigm in higher education with school psychologists helping to improve student experiences at the college and university level.

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