Evaluating Self-Determination and Academic Enabling Behaviors in Students with Intellectual Disabilities in Inclusive Postsecondary Education Programs

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Abstract

Inclusive postsecondary education (IPSE) programs provide students with intellectual disability (ID) an opportunity to access higher education. As these programs have grown over the decades, it is becoming increasingly important that they use data-driven interventions to improve student outcomes, both academically and non-academically. Research on students' non-cognitive skills suggests that enhancing motivation and engagement or attitudes like action control beliefs can improve IPSE student performance and lead to positive academic and career outcomes in the future. In this study, we performed correlation and multiple regression analyses on IPSE students' scores from two assessments non-cognitive skills: the ACES Academic Enablers and the Self Determination Inventory. These analyses show that the degree of a student's action-control beliefs as measured by the Self-Determination Inventory is predictive of their Academic Enablers performance as measured on the Academic Competence Evaluation Scales-College. Our results suggest that interventions targeting the concept of action control beliefs can improve practical non-cognitive skills and dispositions that facilitate academic and professional success for students with ID.

Keywords: IPSE, intellectual disability, self-determination, non-cognitive skills, ACES Academic Enablers

Plain Language Summary

- Inclusive postsecondary education (IPSE) programs give students with intellectual disabilities a chance to go to college.
- These programs are growing, making it more important to understand what things help students in these programs to succeed.
- It is important that decisions about how these programs are designed be based on data about things that have worked in the past.

- One thing that has been proven to help people with intellectual disabilities is focusing on non-cognitive skills, things like motivation or engagement.
- **What we did in this study:** For this study, we found relationships between two tests used to measure non-cognitive skills in students with intellectual disabilities.
- **Findings:** The key finding is that increasing action control belief, which is the belief that one's choices influence the outcomes they experience is related to other key non-cognitive skills that can help students do better in school and in their careers.
- **Conclusion:** We hope that this finding will help IPSE programs to focus on action control beliefs when working with students with intellectual disabilities.

Inclusive postsecondary education (IPSE) programs are designed to give individuals with intellectual disability (ID) increased access to college. Efforts to provide inclusive educational programs for students with ID can be traced back to the Education for All Handicapped Children Act, which was passed in the United States in 1975 and is now known as the Individuals with Disabilities Education Act (IDEA; Grigal et al., 2012). While IDEA addressed access to and provision of early intervention services and K-12 education, explicit federal support for postsecondary education programs for students with ID was not provided before passage of the Higher Education Opportunity Act (HEOA) in 2008. In 2010, the U.S. Department of Education (DOE) funded a total of 52 model IPSE programs through Transition and Postsecondary Programs for Students with Intellectual Disability (TPSID) grants (Grigal & Papay, 2018). A second round of TPSID grants, awarded in 2015, expanded the reach of this program to over 100 campuses in 31 states, including the state of Georgia (Grigal et al., 2020). While some TPSID grants focused on IPSE programs in a single college or university, others used the funding to create multi-university consortia of programs. The data presented in this study were collected from seven IPSE programs participating in one such consortium.

The growth of IPSE programs around the nation is a positive development; however, there is an ongoing need for more data concerning the academic and social development of students participating in IPSE programs (Gibbons et al., 2013). In particular, additional information regarding IPSE students' academic skills and behavior is needed to help educators develop data-driven interventions and supports to improve IPSE student outcomes across a number of domains. Although students with ID generally have academic skills (e.g., reading comprehension, writing skills, mathematics problem solving) that are less developed than many of their peers in the college classroom, they may demonstrate other academically relevant behaviors and dispositions that support their academic success (Farrington et al., 2012; Grigal & Papay, 2018). Because of this, non-cognitive skills (e.g., motivation, social skills, self-regulation, pathways thinking) are key targets for intervention in this population (Volpe et al., 2006). To address this need for data on non-cognitive skills in students with ID, a group of seven IPSE programs within a larger consortium of IPSE programs in the state of Georgia collected measures of non-cognitive skills using the Academic Competence Evaluation Scales (ACES)-College Form (DiPerna, 2004) and the Self Determination Inventory (SDI; Shogren et al., 2017) from

participating students with ID. These assessments target a broad range of non-cognitive skills, and analyses of these data provide key insights into the academic and social performance of IPSE students.

Academic Enablers

Academic enablers are non-cognitive skills measured by the ACES-College and include (a) motivation (defined as persistence and level of interest in academic subjects); (b) engagement (defined as attentive and active participation); (c) interpersonal skills (defined as cooperative learning behaviors); and (d) study skills (defined as strategies that facilitate the processing of new material; Demaray & Jenkins, 2011; DiPerna & Elliott, 2002). The concept of academic enablers was developed by DiPerna and Elliott in an effort to measure non-cognitive skills that were hypothesized to contribute to students' academic competence (DiPerna & Elliott, 1999).

DiPerna and Elliott's initial development and validation of this measure of non-cognitive skills (DiPerna & Elliott, 1999) supported subsequent studies of academic competence at the K-12 (DiPerna & Elliott, 2002) and postsecondary level (Anthony & DiPerna, 2018; DiPerna, 2004). The ACES consists of two primary scales: the Academic Skills Scale and the Academic Enablers Scale. The Academic Skills Scale is comprised of three subscales: reading/language arts, mathematics, and critical thinking. The Academic Enablers Scale consists of four subscales: motivation, engagement, interpersonal skills, and study skills. Each ACES item asks respondents to rate a skill or behavior using two Likert scales. The first Likert scale ranges from 1 to 5 and measures students' skill level compared to peers (Academic Skills Scale) or students' frequency of engaging in the behavior described in the item (Academic Enablers Scale); a second Likert scale ranges from 1 to 3 and measures importance of the skill or behavior described in the item (both Academic Skill and Enabler scales).

The ACES assessment has been used broadly in K-12 education, including several studies focusing on students with high-incidence disabilities. For example, the ACES assessment was used in a study of elementary students with Attention-Deficit/Hyperactivity Disorder (ADHD) and demonstrated that ADHD may impact academic achievement, interpersonal skills, and motivation (Volpe et al., 2006). Using structural equation modeling, Volpe proposed a model in which ADHD influences motivation and interpersonal skills, which then influence study skills and engagement, which directly affect current academic performance in reading and math in first- through fourth-grade students. In light of this finding, Volpe suggested that targeted approaches to improve non-cognitive skills might boost academic achievement in students with ADHD (Volpe et al., 2006). Demaray and Jenkins (2011) took this research further by performing a comparison study in third- through fifth-grade students where the test group had symptoms of inattention, impulsivity, and hyperactivity (IIH), which is broader than a formal ADHD diagnosis. This study found significant lower academic enablers scores for the IIH group compared to the comparison group for overall academic enablers, engagement, interpersonal skills, motivation, and study skills. Cohen's d showed a large effect size (Cohen, 1988) for engagement, interpersonal skills, motivation, and study skills (d = .98, 1.47, 1.70, and 1.74, respectively). While data are limited with regard to the

prevalence and impact of academic enablers in students with ID, we propose that interventions in this area might be similarly helpful in IPSE contexts.

In the early 2000s, researchers used the ACES to assess the academic and non-cognitive skills of college students for the first time (DiPerna, 2004; Elliott & DiPerna, 2002). Briefly, the authors measured the correlations between each scale and subscale and students' recent and overall GPAs. Examining data from a sample of 76 students, the researchers found that total ACES scale and each subscale score, with the exception of the interpersonal skills subscale, had a significant correlation ($p < .05$) with students' most recent semester and overall GPA (DiPerna, 2004). Later studies with larger samples found that academic achievement (e.g., GPA) was positively correlated with academic enablers of motivation and study skills (Elliott & DiPerna, 2002). The larger ACES-College study did feature a subset ($n = 31$) of students with diagnosed learning disabilities and found that, while they scored lower in academic skills ($p < .05$), there was no significant difference in their level of academic enablers compared to students without learning disabilities. The authors propose that this is because students with learning disabilities who reach the college level likely have well-developed academic enablers already to compensate for these deficiencies in academic skills.

Self-Determination

Like academic enablers, self-determination refers to a set of non-cognitive skills that are essential for education and daily life. The SDI (Shogren et al., 2017) is an assessment tool designed to measure specific aspects of self-determined action, including volitional action, agentic action, and action-control beliefs. In the SDI, volitional action is defined as intentional, conscious choices made based on one's own preferences and actions initiated by the individual. Agentic action is defined as identifying goals and pathways towards achieving those goals. Agentic action involves self-regulation, self-direction, and pathways thinking and is important for adapting to opportunities and challenges that arise while pursuing a goal. Action-control beliefs are defined as the individual's attitude and understanding about how their actions are related to the outcomes they experience (Shogren et al., 2017).

The SDI is a relatively new assessment of self-determination, but there has been a long-standing interest in researching self-determination among students with disabilities (Shogren et al., 2008). Across multiple studies, researchers have found that students with higher levels of self-determination are more likely to succeed in school and after school (Shogren et al., 2015). One earlier assessment of self-determination, the AIR Self-Determination Scale (AIR; Wolman et al., 1994), was based on self-determined learning theory. The AIR is available in student, educator, and parent versions and is broken down into capacity and opportunity scales. Another early measure of self-determination was the Arc's Self Determination Scale (SDS; Seong et al., 2015), which was developed based on the functional theory of self-determination. The SDS subscales are based on four essential characteristics of self-determined behavior: autonomy, self-regulation, psychological empowerment, and self-realization. Interestingly, an analysis by Shogren et al. (2008) found only a moderate correlation between the SDS and the AIR ($r = .50$), suggesting that self-determination is more multi-faceted than the constructs measured by

either the SDS or AIR. These findings helped guide the subsequent development of the SDI.

The initial SDI validation study (Shogren et al., 2017) featured 176 students with disabilities including both learning disabilities (n = 57) and ID (n = 34) out of a total of 311 students ranging from ages 12 to 22. Scores of volitional action, agentic action, and action control beliefs subscales were significantly different across disability and non-disability groups, with effect sizes (Cohen's d) of 0.63, 0.59, and 0.35, respectively. This initial study was replicated and expanded in a much larger study featuring 4,165 students (ages 13 to22) with a variety of disabilities, socioeconomic statuses, and racial/ethnic backgrounds, including 299 students with ID (Shogren et al., 2018a). This second study found significant differences in self-determination between students with and without ID as well as greater variance in self-determination scores for students with ID. These results support the interpretation that differences in self-determination for students with ID are not solely the result of personal ability, but are greatly influenced by external factors that include systemic barriers (Shogren et al., 2018b).

Purpose of the Study

The purpose of this study is to examine the relationships between academic enablers and self-determination in students with ID attending multiple IPSE programs in Georgia from 2017 – 2020. Academic enablers and self-determination were reported and analyzed for a sample of IPSE students (n = 50). Because both constructs (i.e., academic enabling behaviors and self-determination) fall within the category of non-cognitive skills, we expected strong associations between these measures and their subscales. The purpose of this study is to address the following research questions and topics:

1. Are there significant correlations between ACES academic enablers and SDI subscales?
2. Are student demographic variables or college experience predictive of non-cognitive skills?
3. Which aspects of self-determination are predictive of academic enabler behaviors?

Method

Participants

Participants for this project were recruited from seven IPSE programs located in the southeastern United States that participated in a larger consortium of IPSE programs, and their demographic information is shown in Table 1. In all, 50 students with ID volunteered to participate. Students were provided with both written and verbal information about the purpose of the study to obtain their informed consent. Because data was collected at multiple time points, informed consent was obtained prior to each stage

of data collection. Data on specific clinical diagnoses of ID were not collected by the research team, but in order for students to be accepted into an IPSE program in the United States, they must be diagnosed with an intellectual disability by a clinician and have an IQ of less than 70.

Forty-four percent of the students included in the study identified as female ($n = 22$) and fifty-six percent of students identified as male ($n = 28$). Of the students in the study, 64% ($n = 32$) identified as Black or African American, 36% ($n = 18$) identified as White. Race and gender were coded as nominal variables for the purpose of regression analysis. Students were given a diverse range of options for self-identifying race and gender, but the resulting data reflects all students that consented to the study and completed both assessments.

Assessments

The ACES-College and SDI assessments were given in accordance with the testing plan of each IPSE program, which generally included administrations twice annually at the beginning and end of the academic year. IPSE assessment plans were developed by the consortium and administered twice annually. This dataset was compiled from assessments administered between 2018 and 2020. Some students completed one or both assessments during the project period, but for each student, only the most recent ACES assessment taken within three months of the SDI were used. Each test was administered according to recommended protocols for each assessment. Data collection and study protocols were approved by the Georgia State University Institutional Review Board. Accommodations were made on an individual basis, as determined by program staff, in alignment with the accommodations received by the students within their programs. Common accommodations included extra time and oral examination.

Academic Competence Evaluation Scales-College Form

The Academic Competence Evaluation Scales-College (ACES-College) were used to assess beliefs about skills, attitudes, and behaviors that contribute to academic success in individuals with ID in IPSE programs. ACES-College is a psychometrically validated instrument that uses self-rating scales to assess the academic functioning of students in postsecondary institutions. Internal consistency coefficients for ACES overall scale and academic enabler subscales ranged from 0.82 to 0.96 (DiPerna & Elliot, 1999).

The ACES-College includes scales of academic skills, academic enablers, and learning and self-management strategies. The academic enablers scale includes subscales in interpersonal skills, motivation, study skills, and engagement. The academic enablers scale asks individuals to rate the frequency of using certain behaviors or academic skills on a 5-point scale (1 = *Never* to 5 = *Almost Always*) and the importance of the behavior to the individual on a 3-point scale (1 = *Not Important* to 3 = *Critical*). Only the frequency ratings were used in the current study.

The Academic Skills and Academic Enablers scale scores on ACES-College can be classified into three categories: Developing (i.e., performance is below grade-level expectations), Competent (i.e., performance is at grade-level), or Advanced (i.e.,

performance is above grade-level expectations). The subscale scores from both scales can further be classified into five categories: Far Below, Below, At Grade Level, Above, and Far Above.

Self-Determination Inventory-Student Report

The Self-Determination Inventory-Student Report (SDI-SR) was used to measure aspects of self-determination in students in IPSE programs. The SDI-SR is a 21-item self-report rating scale used to assess perceptions of overall self-determination in individuals ages one to 22. Overall self-determination is composed of scales measuring volitional action, agentic action, and action-control beliefs. Volitional action is derived from measures of autonomy and self-initiation; Agentic action is derived from measures of pathways thinking and self-direction; Action-control beliefs are derived from measures of control-expectancy, psychological empowerment, and self-realization. Although the SDI-SR was recently developed, studies demonstrated acceptable reliability among students with disabilities with reliability alphas ranging from 0.60 to 0.87 (Shogren et al., 2017). In addition, confirmatory factor analysis was completed to compile the most robust set of items (Shogren et al., 2020b).

Students completed the SDI-SR online by sliding a scale to reflect the extent to which they agree with a statement. After answering all rating-scale questions, students answered various demographic questions, including age, race, primary language, city of residence, disability status, education status, whether a student receives or received special education services in school, living arrangements (e.g., living on their own, with family, with roommates), employment status, and how much support a student needs at school or at work. After completing the SDI-SR, students were given a visual representation of their SDI in a bar graph, suggested actions they can take or skills they can use to improve their self-determination skills, and access to a report guide that summarizes components of self-determination.

Procedures

When the ACES-College or SDI-SR were administered, students were asked to provide informed consent to continue with the assessment and to have their results included in research and evaluation of IPSE programs, including this study. Consent for use in the study was obtained prior to each assessment. Students were given a verbal explanation of the consent document if unable to read the written form. Students were also asked to fill out a survey containing demographic information for the purposes of the study. Students were asked to provide their gender, age, race or ethnicity, as well as how many years they had been in college.

Analyses

Data were collected via test reporting software, Qualtrics reports, and reports generated from the testing provider. On an annual basis, the resulting data were compiled into Microsoft Excel spreadsheets for each IPSE program. At the conclusion of the study period, these data were cleaned and aggregated into a single spreadsheet with duplicates and recording errors removed. Descriptive statistics and summaries of student

demographics were performed in Microsoft Excel. Correlation analysis and multiple regression analyses were performed in IBM SPSS 27.

Results

Correlation Analysis of ACES Academic Enablers and SDI

From our sample, we collected a dataset of 50 time-matched ACES-College and SDI administrations within the same academic semester. For the ACES-College Academic Enablers Total Scale, the overall mean score was 139.9 (out of 180 possible points) with a standard deviation of 25.3. For the ACES Academic Enablers subscales, the means scores and standard deviations were as follows: interpersonal skills had a mean of 30.7 (SD = 6.4) out of 40 possible, engagement had a mean of 28.5 (SD = 7.4) out of 40 possible, motivation had a mean of 40.0 (SD = 7.5) out of 50 possible, and study skills had a mean of 40.9 (SD = 7.6) out of 50 possible. For the SDI, the overall mean score was 86.0 with a standard deviation of 13.6. The SDI subscales, the mean scores and standard deviations were as follows: volitional action had a mean of 85.0 (SD = 14.4), agentic action had a mean of 85.5 (SD = 15.7), and action-control beliefs had a mean of 86.7 (SD = 15.3). All scores on the SDI overall scale and subscales were out of 100 possible points.

Correlation analyses were performed on the ACES academic enabler scales and SDI subscale scores as well as the student demographic information and extent of college experience (i.e., years in college) as shown in Table 2. Academic enablers subscale scores were analyzed individually to evaluate their relationship to student demographic information, college experience, and volitional action, agentic action, and action control beliefs, as measured by the SDI. For interpersonal skills, the most highly correlated variables were agentic action (r = .314, p = .026) and action-control beliefs (r = .397, p = .004). For engagement, the most highly correlated variables were agentic action (r = .297, p = .036) and action-control beliefs (r = .393, p = .005). For motivation, the most highly correlated variables were agentic action (r = .292, p = .040) and action-control beliefs (r = .309, p = .029). For study skills, the most highly correlated variables were agentic action (r = .430, p = .002) and action-control beliefs (r = .460, p < .001). We found no significant correlations between demographic variables. As expected, all ACES academic enablers were correlated strongly with one another (p < .01) and all SDI subscales were correlated with one another (p < .01). Volitional action was not significantly correlated with any academic enabler subscales.

Multiple Regression

After confirming that the constructs measured on the SDI were significantly correlated with academic enablers as measured by the ACES-College, we used multiple regression to examine whether self-determination was predictive of academic enablers in IPSE students. Babyak (2004) indicated that overfitting regression models is a problem with smaller sample sizes, and suggested that the risk of this can be minimized by having at least 10-15 participants for each predictor variable included in regression models. As such, we chose to include only SDI action control belief scores in our multiple regression

analyses because our preliminary correlational analysis indicated that scores on this subscale were most strongly associated with students' academic enablers. In addition to SDI subscale of action control beliefs, demographic variables of race, gender, and years of college experience were also selected for inclusion in the multiple regression model. The inclusion of these demographic variables in the model is in line with many other studies of students' academic and non-academic skills (Richardson & Woodley, 2003). Further, race was of interest in this analysis because our sample set includes a high percentage of African American students (64%) relative to White students (36%).

Multiple regression models were created for each ACES academic enablers subscale as shown in Table 3. For interpersonal skills, the regression model that included years of college experience, race, gender, and action control beliefs was significant ($F(4,45) = 3.87$, $p = .01$) and accounted for 26% of the variance in students' self-reported interpersonal skills. For engagement, the regression model including years of college experience, race, gender, and action control beliefs did not reach statistical significance ($F(4,45) = 2.502$, $p = .056$), but it did account for 18% of the variance in students' scores on the ACES-College engagement scale. For motivation, the regression model including years of college experience, race, gender, and action control beliefs also was significant ($F(4,45) = 1.658$, $p = .176$); however, that model accounted for 13% of the variance in students' self-reported motivation. For study skills, the regression model including years of college experience, race, gender, and action control beliefs was significant ($F(4,45) = 3.870$, $p = .009$) and accounted for 26% of the variance in students' scores on ACES-College study skills scale. Of note, across the four regression models, neither student demographic characteristics (i.e., race and gender) nor the amount of time in college were significant predictors of any of the academic enabling behaviors measured.

Discussion

This study provides the first known assessment of non-cognitive skills in IPSE program participants measured using ACES Academic Enablers and SDI. To our knowledge it is also the first study examining correlations between these two measurements of non-academic skills. In addition, we also found that SDI and ACES academic enablers assessments were highly correlated. This is largely in agreement with the published literature on the two assessments, as they measure related constructs, and our study provides additional details on how these two measures of non-academic skills overlap.

The most significant predictor of ACES academic enabler behaviors was action control beliefs as measured by the SDI. According to the self-determination literature, action control beliefs entail understanding how an individual's actions are related to perceived outcomes (Shogren et al., 2017). Individuals with higher scores on the action-control beliefs subscale of the SDI believe that their actions greatly impact their experiences and success. Shogren and colleagues (2015) describe three types of action control beliefs: control expectancy (believing in the connections between oneself and one's goal), capacity beliefs (believing in one's capability to achieve the goal), and causality beliefs (believing in the utility of one's methods of achieving the goal). Based on this, action-control beliefs require an integration between an individual's beliefs that they

can achieve a goal, that they have capability of achieving the goal through specific methods, and that these methods will ultimately allow the individual to achieve this goal.

Our data suggests that students with a stronger belief that their actions are causally related to the outcomes they experience are more likely to exhibit higher levels of academic enabling behaviors. This suggests that this component of academic self-determination is strongly related to academic enablers as measured on the ACES-College.

Implications for Future Research

In terms of future work in this area, a critical step is testing how generalizable these results are when evaluating other IPSE programs as well as other transition settings for young adults with ID. While no studies have been conducted to date comparing college students with ID in IPSE programs to those not enrolled in IPSE programs, we hypothesize that the population of students in IPSE programs will likely have more developed academic enablers than age-matched individuals with ID who are not IPSE students.

Furthermore, there are many IPSE programs in the United States that span a wide variety of curricular focuses and education settings. Some of this diversity in IPSE program focus and structure were represented in our study, which includes students with ID at large, urban research universities and small, rural technical colleges, but more data are needed to understand these differences more fully. In addition, research with larger samples can better represent the scope of diversity in IPSE programs and students. Understanding differences in outcomes across different programs and student subgroups can guide further development of IPSE programs and potentially increase the representation of and success of students from traditionally marginalized communities in IPSE programs.

Another area for future work is identifying effective measures of student success in IPSE programs. To date, most IPSE programs are non-degree granting, and students generally audit courses, so many IPSE students do not have traditional GPAs. While a GPA is not the only metric of success of IPSE students and programs, there are currently few reliable metrics for evaluating student success in the many forms it can take. Because of this, there could be a broad usefulness for a standardized, holistic metric for student success, incorporating academics, career goals, and personal and social development, that could facilitate comparisons within and between IPSE programs. The development of a holistic student success scale (based on the ACES-College, SDI, and other measures) could enable testing of targeted interventions across multiple skill areas facilitating data-driven improvements to education for IPSE students. The desire to better quantify the performance of IPSE students should be thoughtfully considered by researchers and program staff in this field. Quantitative metrics like GPA could result in IPSE students being more qualified for jobs, but student needs should be considered individually, and quantitative performance should always be considered in the holistic context of the student's needs and development.

Implications for Practice

Results from this study suggest that students with higher levels of self-determination, specifically action-control beliefs, engage in more academic enabling behaviors that promote academic achievement and success in IPSE programs. Previous research has demonstrated interventions focused on building self-determination skills in students with ID contributed to gains in various academic skills (Fowler et al., 2007). Thus, students with ID are likely to benefit from targeted interventions in self-determination skills and may make gains in academic enabling behaviors following these interventions. Self-determination could be a focus for intervention that can impact multiple academic enabling skills, preparing students with ID to meet the rigorous demands of IPSE programs.

A recent meta-analysis of self-determination interventions found small-to-very large effect sizes across various self-determination intervention approaches (Burke et al., 2020). The specific intervention programs Burke and colleagues highlighted in their review included the Self Determined Learning Model of Instruction (SDLMI), Whose Future Is It Anyway?, the Self-Advocacy Strategy, NEXT S.T.E.P. Curriculum, and technology-based intervention techniques. Burke et al. (2020) evaluated interventions implemented across all grade levels, disability categories, and educational settings. Moreover, they reported interventions focused on self-determination generally were viewed favorably by teachers and students (Burke et al., 2020).

Shogren et. al. (2020a) showed that student self-determination could be improved by using the SDLMI both with a curriculum focused on self-determination skills and with a curriculum focused on academic skills. Using the SDLMI, teachers present students with lessons using a three-phase problem solving process (i.e., Phase 1: What is my goal?; Phase 2: What is my plan?; and Phase 3: What have I learned?). This process can be used by students to identify and work toward both academic (e.g., improved writing performance) and behavior goals (e.g., more participation in class discussions). Regardless of the desired outcomes, the SLDMI process supports students' development of action-control beliefs. Other intervention approaches may target self-determination skills in more specific contexts (e.g., transition planning meetings) and within specific subskills of self-determination (e.g., self-advocacy).

Outside of formal intervention strategies, K-12 educators, families, and IPSE staff can also build self-determination across a variety of activities (Stang et al., 2009). This can be done by incorporating tasks and assignments that allow students with disabilities to (a) identify their goals, preferences, and choices, and (b) engage in decision-making and problem-solving processes when making choices in the classroom, home or community (Wehmeyer et al., 2000). Further, K-12 students should be given multiple opportunities to utilize their self-determination and self-advocacy skills in IEP meetings, transition planning meetings, advisement meetings, accommodation planning meetings, and other person-centered planning meetings that may occur at their educational institution (Lee et al., 2012; Shogren et al., 2013).

Given the relationship between self-determination skills and academic enabling behaviors found in this study, it seems reasonable to believe that enhancing self-determination skills through interventions and instructional strategies may help also increase students' use of academic enabling behaviors. Further, these approaches give students with ID the ability to make their own choices and assign value to the things they are learning, increasing their autonomy and self-efficacy.

Limitations

There are several important limitations to this work that are important when interpreting these results and planning future studies and interventions based on this work. This study was exploratory in nature and had a relatively small sample size. This study also did not involve the implementation of self-determination interventions, which limits the ability to demonstrate causal links between related constructs. Further, this study utilized self-report data that may not fully (or accurately) represent the skills and behaviors of IPSE students. It is possible that ratings from staff members or direct observations of student behavior would have resulted in a more complete picture of IPSE students' self-determination and academic enabling behaviors.

There is limited data on the overall diversity of IPSE programs in the United States, suggesting that the programs and students that participated in this study may not be representative of national demographics. Although the different IPSE programs represented in our study operate very differently based on program focus (e.g., arts-, STEM-, or trades-focused, etc.) and the context (e.g., size of the university, urban or rural campus, etc.), the sample represented just a snapshot of IPSE programs in the state of Georgia, and those programs may differ from the types of IPSE programs found in other states. While this study features a large proportion of African American students, it is not clear that the sample accurately reflects the diversity of each program that participated. Further research in this area would help to better understand the demographics of IPSE programs and clarify whether demographic variables or other elements of IPSE program diversity can explain self-determination or academic enabling behaviors.

Conclusion

Our results indicated that the ACES-College Academic Enablers and SDI subscales were partially correlated with one another based on a time-matched sample of IPSE students. The strongest relationships existed between action control beliefs and ACES academic enablers, suggesting that interventions focusing on increasing action-control beliefs could benefit academic enabling behaviors. Further research with larger, more diverse samples may yield additional details on the variations of non-cognitive skills in IPSE students.

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Table 1

Demographic Information for Participants

	Male		Female		Total	
Race	N	%	N	%	N	%
Black or African-American	18	36	14	28	32	64
White	10	20	8	16	18	36

Table 2

Pearson's Correlations Between Demographic Variables and Non-Cognitive Skills

	Mean (SD)	1	2	3	4	5	6	7	8	9	10
1. Years in College	1.7 (.79)	--									
2. Gender	.52 (.50)	.27	--								
3. Race	.64 (.49)	-.12	.11	--							
4. SDI Volitional Action	85.0 (14.4)	.04	-.09	-.16	--						
5. SDI Agentic Action	85.4 (15.7)	.08	.00	-.08	.84**	--					
6. SDI Action-Control Beliefs	86.7 (15.3)	.12	.03	-.15	.78**	.79**	--				
7. ACES Interpersonal Skills	30.7 (6.6)	.14	.21	.19	.11	.31*	.40**	--			

	Mean (SD)	1	2	3	4	5	6	7	8	9	10
8. ACES Engagement	28.5 (7.4)	.11	.18	-.04	.14	.30*	.39**	.74**	--		
9. ACES Motivation	40.0 (7.6)	.01	.12	.11	.13	.29*	.31*	.74**	.73**	--	
10. ACES Study Skills	40.9 (7.6)	.11	.18	.07	.26	.43**	.46**	.64**	.64**	.74**	--

Note: * p < .05; ** p < .01

Table 3

Multiple Regression Predicting Self-Reported Academic Enablers

Dependent Variable	Independent Variables	Unstandardized Coefficients		Standardized Coefficients	
		b	SE	Beta (β)	p
Interpersonal Skills	Constant	16.79	5.28		
	Gender	-3.24	1.72	-.25	.07
R^2 = .26	Race	-1.94	1.83	-.14	.30
	Years in College	.70	1.14	.08	.54
	Action-Control Beliefs	.18	.06	.42	<.01
Engagement	Constant	13.65	6.21		
R^2 = .18	Gender	.026	2.02	.01	.99
	Race	-2.43	2.15	-.16	.27
	Years in College	.17	1.34	.02	.902
	Action-Control Beliefs	.19	.07	.39	<.01
Motivation	Constant	28.45	6.64		
R^2 = .13	Gender	-2.12	2.16	-.14	.33
	Race	-1.58	2.30	-.10	.50
	Years in College	-.36	1.43	-.04	.80
	Action-Control Beliefs	.17	.07	.33	.02
Study Skills	Constant	22.65	6.14		
	Gender	-1.95	2.00	-.13	.34
R^2 = .26	Race	-2.32	2.13	-.15	.28
	Years in College	.24	1.32	.03	.86
	Action-Control Beliefs	.24	.07	.47	<.01

Correction to Potts et al. (2024)

In the article "Evaluating Self-Determination and Academic Enabling Behaviors in Students with Intellectual Disabilities in Inclusive Postsecondary Education Programs," by Ellen E. Potts, Andrew T. Roach, Allison Wayne, Erin Vinoski Thomas, and Daniel Crimmins (*Journal of Inclusive Postsecondary Education*, 2024, Vol. 6, No 1. https://doi.org/10.13021/jipe.2024.3279, published on June 12, 2024, several referenced tables were omitted. Table 2 and Table 3 have since been added to the body of the article.

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