Self-Determination of College Students with Learning and Attention Challenges

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Abstract

Among students with disabilities, the largest two groups in postsecondary educational settings are students with specific learning disability (SLD) and students with attention deficit hyperactivity disorder (ADHD). These students can experience difficulty in achieving goals in academics and their personal lives. At the University of Arizona, the Strategic Alternative Learning Techniques Center provides comprehensive services for approximately 600 students with learning and attention challenges. This study aimed to explore students' perceptions of self-determination to improve the quality of departmental programing with better preventions and interventions. The AIR Self-Determination Scale was completed by 641 participants. Using both quantitative and qualitative methods, the research team gained an in-depth understanding of the enrolled students. Overall, most students viewed themselves as *sometimes* performing self-determined behaviors and *almost always* to *always* provided opportunities. Moreover, they had a high level of *Thinking* and medium level of *Doing* and *Adjusting*. When comparing students by gender, ethnicity, and disability groups, female students' perceptions of self-determination were significantly higher than male students; no significant differences across ethnicity categories were found; SLD group's rating was the highest. Adopting a general inductive approach, three main themes, *Academic Goals, Health Goals, and Employment* and *Finance Goals*, were identified. Awareness of different demographic groups, myth busting, and supports were also discussed to provide useful strategies for college students with learning and attention challenges.

Keywords: self-determination, postsecondary, learning and attention challenges, SLD, ADHD

The numbers of students with disabilities who graduated from high schools have been increasing for the past decade. For example, between 2002–2014, 14% increase of students with a specific learning disability (SLD) received a high school diploma (57% in 2002 versus 71% in 2014) (National Center for Learning Disabilities [NCLD], 2017). More and more students with disabilities continue their education in postsecondary educational settings (Eckes & Ochoa, 2005; U.S. Department of Education, 2011). According to the most updated 2011-2012 report from U.S. Department of Education (2014), more than 10% of students in postsecondary education had a disability; among these, the largest two groups included students with SLD (31%) and students with attention deficit hyperactivity disorder (ADHD) (18%). However, when researchers investigated students' academic achievement, only 41% of students with SLD completed any type of postsecondary education in 2011 (NCLD, 2014). Also, students with ADHD had significantly lower GPAs (Advokat, Lane, & Luo, 2011; Blase et al., 2009) as well as had higher dropout rates when compared to peers without disabilities. Additionally, these two groups of students (SLD and ADHD) usually took longer to complete bachelor's degree (Richman, Rademacher, & Maitland, 2014).

Importance of Self-Determination

Self-determined behavior is defined as "volitional actions that enable one to act as the primary causal agent in one's life and to maintain or improve one's quality of life" (Wehmeyer, 2005, p. 117). The actions include four elements: (a) autonomy, (b) self-regulation, (c) psychological empowerment, and (d) self-realization (Wehmeyer et al., 2011). Once an individual is a causal agent, he/she can accomplish specific goals, which the person hopes to pursue in

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life. Studies show that successful students with SLD demonstrate strong self-determination skills, and they practice more goal-oriented actions and are more self-aware (Richman et al., 2014; Wehmeyer, 1996).

Promoting self-determination has been considered as an effective approach to improve students' executive functioning skills as well as self-regulation (Field, Sarver, & Shaw, 2003; Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013). Several empirical studies explored the self-determination and academic experiences of postsecondary students with disabilities (Anctil, Ishikawa, & Scott, 2008; Getzel & Thoma, 2008; Ju, Zeng, & Landmark, 2017; Skinner, 2004). The results demonstrated that self-determination skills are important to achieve their academic success in postsecondary education. For example, Skinner's study (2004) interviewed 20 graduated college students with SLD and clearly indicated 7 variables which contributed to academic success, including accessing accommodations, understanding of psychoeducational evaluation, knowledge of disability law, use of self-advocacy skills, utilizing support systems, an attitude of perseverance, and goal setting skills. In Anctil et al.'s qualitative study (2008), 19 college students with SLD stated that self-determination supported their academic identity development as well as improved their ability to obtain academic accommodations. In Getzel and Thoma's focus group study (2008), 34 college and university students with disabilities identified key component skills of self-determination as being essential for their success (e.g., problem solving, self-awareness, goal-setting) and for staying in college and obtaining needed supports (e.g., seeking service on campus, forming relationships with professors and instructors).

Researchers also highlighted the need for interventions to foster self-determination due to the improvement of self-determination connected to more positive academic and transition outcomes (e.g., Fowler, Konrad, Walker, Test, & Wood, 2007; Lee, Wehmeyer, Soukup, & Palmer, 2010). Teaching decision making to promote self-determination has been highly recommended both at the secondary and the postsecondary level (Durlak, Rose, & Bursuck, 1994; Hoffman, 2003; Ju et al., 2017; Mull, Sitlington, & Alper, 2001). Students with disabilities benefit from having knowledge of support services and how to access them when needed. Other evidence-based interventions, such as coaching services (Parker & Boutelle, 2009; Richman et al., 2014), personal strengths programs (Farmer, Allsopp, & Ferron, 2015), and self-advocacy training programs (Walker & Test, 2011; White, Summer, Zhang, & Renault, 2014) have also been proved to increase participants' self-awareness, autonomy, goal-attainment level, and self-advocacy about disability knowledge and requesting accommodations.

Role of the Academic Support Program

All universities that receive federal financial support must also have a disability resource office. This office's mission is driven by Section 504 of the Rehabilitation Act of 1973 (1973) and the American with Disabilities Act of 1990 (1990). The purpose of this office is to facilitate the process to provide equal access to curriculum, activities, and campus life for students, staff, and faculty. As a best practice, disability resource offices promote the implementation of universal design when working with instructors to design their courses (Smith & Buchannan, 2012; Zeff, 2007). This office is also responsible to determine eligibility and to coordinate the delivery of academic accommodations for students free of charge. Some of these accommodations include sign language interpreting, real-time captioning, audio recording, extended exam time, alternative exam formats, and assistive technology (Dallas, Upton, & Sprong, 2014; U.S. Department of Justice, 2010; Zeff, 2007). According to an NCLD (2014) report, 94% of students with SLD received accommodations and supports in high school settings; however, only 17% of them accessed these services in postsecondary education settings.

In addition to the disability resource office, most postsecondary institutions also have a learning center where tutoring, educational planning, and workshops may be available to all enrolled students, which may be free or low cost. Although comprehensive in nature, these services may not be adequate for students with SLD and/or ADHD due to complex needs of the student. Thus, the necessity for a comprehensive academic support program specifically designed for college students with learning and attention challenges has become increasingly more popular at college campuses across the US.

SALT Center at UA

The Strategic Alternative Learning Techniques (SALT) Center focuses on students with learning and attention challenges and annually provides comprehensive services for approximately 600 students at the University of Arizona (UA) in Tucson. The SALT Center's mission is to inspire students to succeed in higher education and facilitate learning, self-advocacy, and independency by empowering students to take ownership of their education. The philosophy embodies the belief that learning involves the process of identifying one's strengths and weaknesses, learning preferences, and creating strategies

that will enable one to be successful. To improve the quality of programming and support students to meet their postsecondary environmental needs as well as encourage student engagement, self-awareness, and growth, the center offers support based on a student-centered model. The main services include four domains: (1) educational planning with a professional student support specialist, (2) content specific tutoring, (3) educational technology support, and (4) in-house psychological services.

The Present Study

To date, students with learning and attention challenges are usually considered as a marginalized or invisible population in postsecondary educational settings (Connor, 2012; Mullins & Preyde, 2013). Few researchers have investigated self-determination and explored goals among college students with learning and attention challenges. Zero studies were identified that a comprehensive academic learning center for students with SLD and ADHD used self-determination as a framework. This study aimed to gain perspective on students' perceptions to explore the possibility of using self-determination as a foundational concept in which to support current practices and identify new programs and services for college students who learn differently.

When students entered the SALT Center, the first step was to gather information about their goals, learning styles, strengths, weaknesses, and learning challenges along with current semester needs. The data collection was designed to help build knowledge and start conversations between students and their assigned student support specialist. To achieve these purposes, the research questions included: (a) How did students view their self-determined behaviors? (b) Did students with different gender, ethnicity, and disability demonstrate different degree of self-determination? (c) What were their goals that they planned to achieve when they entered the program?

Method

Research Design

To investigate and explore what students experienced, the researchers employed a mixed methods research design. Using both quantitative and qualitative methods, the research team were afforded the opportunity to gain more in-depth understanding of student perceptions from deductive and inductive ways (Creswell & Plano Clark, 2011). Quantitative data was first reported, including descriptive and inferential results, followed by both qualitative themes and occurrences of identified categories in a qualitative dataset. This integration of combining both types of datasets would be displayed (e.g., text and numeric information), and the research results will be discussed comprehensively.

Participants

To be included in this study, students (a) were enrolled at the UA as a first-year college student; (b) were enrolled in the SALT Center, and (c) self-identified as having a learning and/or attention challenge. The participants included 374 (58.3%) male and 260 (40.6%) female students, with 7 (1.1%) students who did not disclose their gender. White students (made up the majority of all students (79.5%), other ethnic groups accounted for 20.5%, and 1.9% of the students did not disclose their ethnicity in this study. Disability status was optionally disclosed in the survey by students' willingness, and approximately 34.6% of participants chose not to disclose. The largest group was students with ADHD (28.9%), and the students with SLD were accounted for 17.6%. Students with comorbidity had SLD and/or ADHD characteristics combined with other disorders, such as ADHD with SLD, SLD with anxiety, and ADHD with SLD and depression, were accounted for 16.1%. Others, such as autism spectrum disorder, obsessive compulsive disorder, were 2.8% of all participants. The mean high school GPA was 3.02 (n = 641). A total of 641 students participated in this study that took place between spring semester of 2013 and fall semester of 2016, including year 2013 (n = 170), year 2014 (n = 180), year 2015 (n = 187), and year 2016 (n = 104) (see Table 1).

Data Collection

Procedure. Survey data were collected for two purposes: (a) to inform the student's support specialist about the students' academic needs and background; (b) to perform department wide analysis on the trends of each cohort. Upon Institutional Review Board exemption, the research team began the study in 2013. Prior to a student's fall enrollment, most participated in a one-and-a-half-day University orientation. The optional survey was administered on the first day by a SALT Center professional. Students were allotted approximately 30 minutes to complete the survey. Students who decided to opt out of the study were given an alternative activity, which was to learn more about strategies related to time management, notetaking, and other academic skills.

AIR Self-Determination Scale. As part of the learning survey, students completed the AIR Self-Determination Scale–student form (AIR Scale; Wolman, Campeau, DuBois, Mithaug, & Stolarski, 1994)

and a several demographic prompts. The AIR Scale was selected for this study because (a) it measures global self-determination; (b) it is a widely and freely available online tool; (c) it has been designed to be administered by multiple stakeholders, including educator, student, parent, and research, depending on the different research requirements; and (d) researchers can collect both qualitative and quantitative data for comprehensive exploration. In this study, the qualitative investigation was to identify students' current goals. One main question was answered by all participants: Give an example of a goal you are working on now. The quantitative data collected was to examine students' self-determination. The student form of the AIR Scale includes 24 items divided into two domains: *Capacity* and *Opportunity* (see Table 2). Each domain has two sub-scales which include six items individually. All four sub-scales are comprised of three different components: *Thinking, Doing,* and *Adjusting.*

Using a 5-point Likert-type scale (1=never, 2=almost never, 3=sometimes, 4=almost always, 5=always), the AIR Scale has been developed with strong psychometric properties (Carter, Trainor, Owens, Sweden, & Sun, 2010; Mithaug, Mithaug, Agran, Martin, & Wehmeyer, 2003). Previous studies further suggested that the scale can be appropriate for youth with high-incidence disabilities (Carter, Lane, Pierson, & Glaeser, 2006; Shogren et al., 2008).

The scale manual (Wolman et al., 1994) showed the self-determination difference from initial study results. For example, based on gender and ethnicity, no significant differences were shown in self-determination of the participants. However, students with disabilities had a significantly lower rating of self-determination than students without disabilities. Students with mild disabilities had a significantly higher rating of self-determination than students with moderate to severe disabilities. According to the scale manual, reliability tests on the AIR Scale indicated a strong item consistency (.91–.98), high internal consistency (.95), and adequate test–retest reliability (.74 tested after three months). With the present samples, the researchers conducted reliability analysis for this current study using Cronbach's alpha for the entire AIR Scale. The alpha value of the entire scale was .901, indicating excellent internal consistency.

Quantitative Data Analysis

For quantitative analysis, descriptive analyses were first conducted for showing group demographics and mean scores of overall and sub-scales of the AIR Scale. The Pearson's Product-Moment Correlation was computed to examine the correlations across means of sub-scales. The coefficient value between ± 0.50 and ± 1 was considered a strong correlation; the value between ± 0.30 and ± 0.49 was seen a medium correlation; the value below ± .29 showed a small correlation. For investigating comparisons among means of subscales, paired sample t-test was employed to compare between means of *Capacity* and *Opportunity,* and repeated measures ANOVA was administered to compare means of *Thinking, Doing,* and *Adjusting.* For exploring comparisons among means of groups across sub-scales, paired sample *t*-test was employed for gender groups, and one-way ANOVA was used to compare ethnicity and disability groups. Effect size was calculated for interpreting the magnitude of standardized mean difference. According to Cohen's (1988) suggestion, the standardized mean differences of $d = 0.2, 0.5, 0.8$ and the proportion of the variation $\eta^2 = 0.01, 0.06, 0.014$ indicated small, medium, and large effects, respectively.

Qualitative Data Analysis

After the 24 item Likert-scale prompts, students were prompted to complete three open-ended prompts that were included in the AIR scale. For purposes of this study only the first prompt was analyzed. It read, "Give an example of a goal you are working on now." The coding and analysis of the first cohort was completed at the midpoint of the study, then the remaining cohort responses were analyzed as they were submitted each year. The reliability of the themes was reinforced by triangulating codes from multiple coders. The coding team consisted of three coders who participated in the research team periodically. The research team used the responses from the first cohort to establish the code and thematic foundation, which aided in the categorizing of the remaining cohort responses. The coders educational experiences were extensive and diverse. The first coder was a graduate assistant with a special education background, mainly responsible for managing the coding process. The second coder was the director of the SALT Center, supervising the weekly progress and the management of the overall study. The third coder was a graduate assistant with information system background, mainly responsible for the data visualizations and pulling data from university systems. The three coders provided insight on the codes and themes from multiple perspectives, which led to the refinement of the coding system.

A general inductive approach (Thomas, 2006) was conducted for analyzing and interpreting the data. The purpose for using this approach was to condense raw qualitative data into clear and brief findings in the context of the focused question. The general inductive approach allows the phenomena or underly-

ing sentiments within the data to rise to the surface. A five-phase analysis was employed, including four phases for identifying themes and the final phase for counting the occurrence of the categories and themes:

1. During the first phase, three coders separately read the raw textual data.
2. Second, all coders collaborated to explore patterns, reoccurring ideas, and generate as many codes as needed.
3. Third, the textual data was gradually condensed through discussion. Codes which were conceptually similar were collapsed into one another under tentative categories through a display of a diagram, which helped examine structure into a compact format (Huberman & Miles, 1994).
4. Fourth, the first and second coder, those who were most familiar with students enrolled in the SALT Center, collaborated and used a constant comparison procedure to refine categories by deleting or adding categories for the clarification until codes became saturated (Charmaz & McMullen, 2011; Corbin & Strauss, 2008; Merriam, 1998). When they had different opinions, the third coder provided her comments and insights. After making changes, a reconciled list of open codes was produced. The emerging themes were then determined to be representatives of students' goals.
5. At the final stage, the principle coder counted the occurrence of categories and themes as well as created visualization data.

Quantitative Results

How Did Students View Their Self-Determined Behaviors?

Overall. Students rated their perceptions of being self-determined as ranging from *sometimes* to *almost always* (M = 3.86, SD = .49) (Table 3). Students' ratings were then divided into three levels to explore the percentage of each level: (a) low level, *never* to *almost never*; (b) medium level, *sometimes*; and (c) high level, *almost always to always*. The largest proportion of students (52.2%) rated themselves on the medium level of self-determination. In subscales, a medium level of *Capacity* (61.3%) and a high level of *Opportunity* (57.9%) consisted of the largest percentage of students. The results showed that most of students viewed themselves to *sometimes* perform self-determined behaviors and *almost always* to *always* had been provided opportunities. High level of *Thinking*, medium level of *Doing*, and medium level of *Adjusting* had the largest groups of students, indicating that most of the students viewed themselves as *almost always* to *always* to think and *sometimes* do and adjust when performing self-determined behaviors (see Table 4). The results regarding two domains of self-determination (i.e., *Capacity* and *Opportunity*) and three stages of self-determination process (i.e., *Thinking, Doing*, and *Adjusting*) were addressed as follows.

Capacity and opportunity. Students *sometimes* to *almost always* explored their knowledge, abilities, and perceptions that enable self-determination and feel good about it (i.e., *Capacity*) (M = 3.69, SD = .55) and *almost always* had opportunities to engage in self-determination behaviors (i.e., *Opportunity*) (M = 4.03, SD = .57). Students' average perception of *Opportunity* was significantly higher than *Capacity,* $t(641) = 15.69$, $p < .01$, $d = .61$, referring that students had strong support at school and/or home to achieve their goals compared to their perceptions about their own ability to set, pursue, and achieve their desired goals (Table 3).

Compared with the sub-scales of *Capacity,* the result showed that students had a significantly higher level of feeling positive about their abilities and believing that they could achieve them (i.e., HIF) (M = 3.83, SD = .58) than the level that students actually demonstrated how they set goals and made choices, decision, and plans (i.e., TID) (M = 3.55, SD = .61), $t(641) = 16.08$, $p < .01$, $d = .4$.The analysis of the subscales of *Opportunity* indicated that students' perceptions of opportunities available for them to engage in self-determined behaviors at home (i.e., WHAH) (M = 4.28, SD = .68) was significantly higher than opportunities available at school (i.e., WHAS) (M = 3.78, SD = .70), $t(641) = 16.59$, $p < .01$, $d = .72$. Students had stronger support at home to achieve their goals compared to their perceptions of opportunities offered by school.

The correlation between *Capacity* and *Opportunity* was .52 ($p < .01$). The correlation coefficient result showed positive correlation and strong relationship, showing students who viewed themselves having higher capacity received more opportunities, and vice versa.

Thinking, doing, and adjusting. Three stages of the self-determination process included *Thinking* (i.e., identify and set goals to meet needs), *Doing* (i.e., make choices and take actions to meet goals), and *Adjusting* (i.e., evaluate results and alter plans if necessary). A repeated measures ANOVA revealed that the average perceptions of students' *Thinking* (M = 4.00, SD = .49) was significantly higher than both *Adjusting* (M = 3.83, SD = .56) and *Doing* (M = 3.76,

SD = .60), $F(2,1280)=99.792$, $p < 0.001$. Follow-up comparisons indicated that students had significantly higher levels of belief that they could set goals to meet their needs than that they could make an adjustment, $t(640) = 9.91$, $p < .01$; their perceptions of making adjustment was significantly higher than making decision or taking actions, $t(640) = 4.21$, $p < .01$.

The correlation between *Thinking* and *Doing* was .68 ($p < .01$); it between *Doing* and *Adjusting* was .72 ($p < .01$); it between *Thinking* and *Adjusting* was .69 ($p < .01$). Three correlation coefficient results showed positive correlations and strong relationships, indicating that students who viewed themselves as having higher levels of beliefs in one of the three stages (i.e., setting goals, taking actions, and making adjustments) positively influenced their beliefs in one of the other two stages.

Did Students with Different Gender, Ethnicity, and Disability Demonstrate Different Degree of Self-Determination?

Gender. Both female ($M = 3.91$, $SD = .48$) and male students ($M = 3.82$, $SD = .49$) stated they *almost always* to *always* engaged in self-determined behaviors (Table 5). The comparison was found that the perception of self-determination of female students was significantly higher than male students, $t(632)= 2.37$, $p = .018$, $d = .19$.

In sub-scales of *Capacity*, the perceptions of females' and males' self-determination had no significant differences, $t(632)= 1.42$, $p = .16$. However, the perceptions of *Opportunities* available between gender groups had significant differences, $t(632)= 2.68$, $p = .008$. The results indicated that the degree of opportunities available for female students to engage in self-determined behaviors at school ($t(632)= 2.41$, $p = .016$) and at home ($t(632)= 2.04$, $p = .042$) was both significantly higher than opportunities available for male students. From exploring the perceptions of three stages of self-determination, only the level of female students' perceptions on *Doing* was significantly higher than male students' perceptions, $t(632)= 2.91$, $p = .004$; the rating of *Thinking* ($t(632)= 1.90$, $p = .06$) and *Adjusting* ($t(632)= 1.44$, $p = .15$) were not found to differ based on students' gender.

Ethnicity. No significant differences in ratings of overall self-determination across ethnicity categories were found, $F(5, 623) = 1.26$, $p = .28$ (See Table 6). No significant differences among ethnicity groups were also found in in *Thinking* $F(5,623) = 1.30$, $p = .26$; *Doing* $F(5,623) = 1.08$, $p = .37$); and *Adjusting* $F(5,623) = 1.12$, $p = .35$) had no significant differences.

Disability. The overall self-determination rated by three disability groups had significant differences, $F(2, 398) = 6.22$, $p = .002$, $\eta^2 = .03$, with small effect sizes of 3% of the variation. The perceptions of self-determination rated by SLD group ($M = 3.97$, $SD = .49$) was the highest and had significantly higher rating than ADHD group ($M = 3.77$, $SD = .49$) (Table 7). In sub-scales, SLD students' perceptions of *Capacity* was also the highest and significantly higher than ADHD students' perceptions ($p = .001$); three groups' perceptions of *Opportunity* did not have significant difference, $F(2, 398) = 2.89$, $p = .06$. For three stages of the self-determination process, students among disability groups did not have significant differences on *Thinking*, $F(2, 398) = 1.67$, $p = .19$. They had significant differences on *Doing,* $F(2, 398) = 7.20$, $p = .001$, $\eta^2 = .04$ and *Adjusting*, $F(2, 398) = 6.32$, $p = .002$, $\eta^2 = .03$. Although with small effect sizes of 4% and 3% of the variation in *Doing* and *Adjusting*, respectively, SLD groups' rating was both significantly higher than ADHD groups.

Qualitative Results

What were the Goals that Students Planned to Achieve?

Three main themes, *Academic Goals, Health Goals,* and *Employment and Finance Goals*, were identified as the planning goals of students with learning and attention challenges in the SALT Center. In total, 573 codes were identified. Each theme included several categories to describe a specific phenomenon of students' responses. Sub-categories were demonstrated under different categories. The themes, categories, and sub-categories were outlined in Table 8 to enhance readers' understanding of students' goals.

Theme One: Academic Goals

When exploring students' goals, the first category extracted from their responses was academic goals. The theme accounted for 55%, over half of the total coded responses, representing the largest proportion of the content. The categories under the first theme were considered as three stages–before, during, and after college: (a) attending college, (b) success in college, and (c) pursing advanced learning. Percentages of the three categories are displayed in Table 8.

Attending college. Students' responses (33%) in the Academic Goals theme showed their targets of attending college. Graduating from high school smoothly appeared to be the first step for attending college. For example, one student said, "My goal is to continue to push myself and work hard through the end of the year and to not be a victim of 'senior

slide'." Some students stated their expectations to get acceptance to college. Approximately in 80 student responses, the largest proportion among three sub-categories, reflected their foci on transition preparations, including academic, mental, and material. For example, one student stated that he/she was "preparing academically for the next school semester." Some students expressed their worries about attending college, such as "I am packing and getting ready to move into college, but feeling very nervous and anxious about moving away from home." Other students planned to prepare materials that they needed for college, such as "I am preparing for getting all materials that I need to succeed."

Success in college. More than two hundred students' responses (65%) in the Academic Goals theme reflected students were eager to succeed in college. Students expected to succeed at their first year, maintain a good GPA throughout college, and declare their majors. For example, students said they wanted to "start off college with good grades," "maintain good grade," and "find the right major and accomplish it." Some students not only described earning a degree but also setting goals of their GPA and connecting their coursework with getting a job, such as "graduate with a 3.5 at least" and "trying to earn my degree to be able to have a good job." Only 2% of students' responses showed their goals to pursue advance learning after graduating college.

Pursing advanced leaning. Approximately only 2% of students' responses showed their goals to pursue advance learning after graduating college. Two students stated that they planned to apply to graduate school at their targeted universities after college graduation. In addition to attending graduate school, other students said their goals were to enroll in professional programs, such as medical school and veterinarian school. One student even had already determined to study "osteology, anthropology, and medicine at the professional level" five years ago.

Theme Two: Health Goals

Students' responses reflected an importance of health. The coded responses (28%) in the Health Goals theme represented the second highest proportion of the content. The categories under this second theme were (a) physical health, (b) mental health, (c) social relationship, and (d) leisure engagement. Percentages of the four categories were demonstrated in Table 8.

Physical health. Approximately 37% of students' responses in the Health Goals were their physical health. Students especially emphasized two kinds of physical health–eating healthier and doing physical fitness. Students had goals of eating better diets, cutting sugar out of their diet, and developing better eating habits. About physical fitness, students focused on getting in a better shape. For example, students said they wanted to "los[e] weight" (mostly women) or "gain weight" (mostly men).

Mental health. Nearly 20% of students' responses in Health Goals theme showed their expectations to enhance their mental health, including developing self-awareness, becoming independent, and building self-advocacy skills. Some students planned to develop their self-awareness and to know more about their own feelings, motives, and desires. For example, one student stated a goal to "build self-esteem and be positive." Another two students mentioned about working on their awareness of stress and anxiety, stating "trying not to over stress myself" and "working on becoming less anxious." One student wrote, "This isn't necessarily a school-related goal, but I'm working on discovering myself. For example, what makes me happy, what is toxic in my life, how to make myself feel better, and what works best for me." In addition, becoming independent was addressed. Students expressed that they were working on "becoming more independent" and "self-reliant" in their life and/or academic field. One student's response, "A goal that I am working on now is being more of an advocate for my learning disabilities and learning how to speak," provided strong evidence that they intended to build advocacy skills.

Social relationship. Students' responses about social relationships (28%) in the Health Goals theme included spending time with family/friends, joining a team, and making new friends. Students not only expected to keep good relationship with their family and friends but also to expand their social relationships. Some students mentioned they wanted to make new friends, such as "to make new friend and build a community for myself" and "being more outgoing and social." Some students specified the teams that they had desires to join, including a sport team, a fraternity/sorority, and a student club. For example, students said they wanted to "play club baseball in college" and "apply to the Freshmen Class Council."

Leisure engagement. About 15% of students' responses reflected their leisure engagement in the Health Goals theme. This category accounted for the smallest proportion of the content; however, most of students' responses showed their hobbies they pursued during their leisure time were embedded with professional skills and/or knowledge. Three types of leisure engagement were included: artistic pursuit, language-based hobby, and athletic activity. Students who pursued artistic hobbies set goals in working on

artworks, music, and performing art. For example, students said they planned to "get better at different art techniques," "learn guitar," "write the most sophisticated and beautiful music," and "work on YouTube channel."

Theme Three: Employment and Finance Goals

Students' responses under the Employment and Finance Goal theme accounted for 28% of the total responses, which was the smallest proportion of an entire coded content. These responses showed evidence of (a) job and career and (b) finance goals. Percentages of both categories are presented in Table 8.

Job and career. About 65% of coded responses under this theme were described students' job and career goals. Job targets were considered short-term, including students' pursuit in summer job and internship. Some students who were working on short-term, part-time job anticipated to get promotion and work harder to gain more work experiences. Long-term career goals included varied occupations depending on students' potential majors and/or interests. For example, students wanted to become a nutritionist, professional photographers, athletic trainers, architects, businessmen who owned companies, and productive artists.

Finance goals. Approximately 35% of students' responses under the third theme was finance goals. Three dimensions were included: saving money, earning money, and spending money. Students who stated spending money usually targeted a product or recreation activity, such as purchasing a car, wakeboard, trip, and ticket. Students' responses that reflected saving money and earning money usually included not only their actions to save and earn money but also their plans and/or purposes. For example, one student stated, he/she tried to "get a second job to save more money for college," and another student said, "earning enough money from my job to be able to afford gas for my car."

Discussion

Awareness of Different Gender, Ethnicity, Disability Groups in Self-Determination

The impacts of multiple individual factors on self-determination have been examined in several studies (Carter et al., 2010; Mithaug, Campeau, & Wolman, 2003; Nota, Ferrari, Soresi, & Wehmeyer, 2007; Shogren et al., 2007; Wehmeyer & Garner, 2003; Wehmeyer et al., 2013). Knowing the results of these studies may lead to validate and implement interventions for future efforts. Three demographic characteristics, including gender, ethnicity, and disability, may prove to be important when designing academic support for students.

Gender. The findings of examining differences in self-determination by gender are limited and mixed. Wehmeyer and Garner (2003), as well as Mithaug et al. (2003), found no differences on overall self-determination scores by gender for people with disabilities. While receiving special education services, high school students with disabilities had no gender difference in growth of self-determination (Wehmeyer et al., 2013). However, Shogren et al. (2007) and Nota et al. (2007) found that gender significantly affected self-determination with American and Italian participants, finding that females had higher self-determination scores than male. From the teacher's perspective, female students with high-incidence disabilities were found to have higher self-determination scores than male students (Carter et al., 2010). These findings were consistent with our study. Overall, studies demonstrated that male students' self-determination was lower or at similar levels compared to female students'. As a result of our findings, and those outlined in the literature, an area to further explore would be specific efforts on assisting male students in building self-determined behaviors.

Ethnicity. Studies showed that students' different ethnic groups had no significant difference in self-determination (Carter et al., 2010; Mithaug et al., 2003). The results of our study did not indicate that ethnicity had an impact on the students' perceptions of self-determination.

Disability. In Wehmeyer et al.'s (2013) study, disability as a factor did not have significant effects when intervention or control groups were compared. However, in Carter et al.'s (2010) study, researchers investigated teachers' perceptions of self-determination of students with conduct disorder (CD), emotional and behavioral disorder (EBD), and SLD. Teachers reported capacities of students with SLD to have greater levels when compared to students with CD and EBD. Additionally, researchers found there were no significant differences in perceived opportunities among the three student groups. In our study, students with SLD also had the highest perceptions of their self-determination compared to students with comorbidity and those with ADHD. Their perceptions of opportunities did not have significant differences when compared to each other.

In sum, self-determination of diverse groups (i.e., gender, ethnicity, disability) and when analyzed from different perspectives (i.e., students, parents, teachers) may have different results. Some other characteristics, such as age, setting, social-economic status, and environmental characteristics, may also have a potential impact on students' self-determination (Shogren

et al., 2007). In our study, male students with learning and attention challenges had lower levels of perceptions on their overall self-determination compared to female counterparts at the SALT Center. This result may indicate that educators could put more emphasis or effort on male students' self-determination who also commonly account for higher percentage of enrolled students. In addition, students with ADHD are the largest group among enrolled students, however, they also had lower perceptions of overall self-determination. Compared to other disability groups, students with ADHD may need to gain more attention from parents and educators. This may also provide another area of inquiry for researchers, that is to ask why do young men in college, particularly those with ADHD, tend to have lower perceptions of self-determination when compared to their female peers?

Goals of Students with Learning and Attention Challenges

Myth busting. There are several common myths that have existed regarding students who have executive function difficulties. Some of them include that they are lazy or lack ambition (Lansdown, Burnell, & Allen, 2007). They are also seen as careless and unmotivated in school. In this study, the participants showed that they had clear goals that they desired to achieve in academic, health, and employment and finance areas, while also thinking and working on these goals within a short- and long-term timeline. The importance of setting goals and high expectations for transition planning process have also been identified as being an important part of successful student development (Getzel & Thoma, 2008; Wehmeyer, Agran, & Hughes, 2000). The biggest challenge for students with disabilities is that they tend to have lower levels of self-regulation skills than students without disabilities (Mithaug et al., 2003). When entering college, they may highly engage in what they are pursuing, however, they may face real challenges and feel frustrated because of lower self-determination levels or self-regulated behaviors. Thus, supporting and encouraging them with appropriate strategies that fit their needs is imperative to help them pursue and achieve their goals, while enhancing their self-determination and self-efficacy.

Support. Our study showed students thought their home environments provided more opportunities for them to exhibit self-determination thoughts and behaviors than their school environment, which illustrates a potential gap between teachers' and parents' perceptions of their children with learning and attention challenges (Carter et al., 2010).

When providing supports for students, two findings are worth discussing. First, strong correlations were found between *Capacity* and *Opportunity* as well as among *Thinking, Doing*, and *Adjusting*. When supporting students, parents, teachers, student support specialists, and/or tutors could provide scaffolding in one area, knowing that the other two areas would likely be enhanced. For example, if a tutor were to model and teach a student how to initiate (*Doing*) a study strategy on their own during their study time, the student may also gain greater awareness of the broader skill, which is self-regulation. In turn, this enhanced skill of self-regulation may also increase the student's awareness of how to more effectively *Adjust.* Bandura (2000) illustrated a similar phenomenon when observing how success on related tasks showed to positively impact students' self-efficacy.

Second, self-advocacy, defined by Stodden, Conway, & Chang (2003) and others (Anctil et al., 2008; Daly-Cano, Vaccaro, & Newman, 2015; Thoma & Wehmeyer, 2005), support was one of the sub-categories that aligned with the literature and proved to be an important component of self-determination. However, little is known and documented on how college students with disabilities use self-advocacy skills to navigate the university demands and expectations (Daly-Cano et al., 2015). Several participants had goals related to self-advocacy, thus it may be an area that should be better understood as it could inform intervention practices to help guide and equip students.

Limitations and Implications

Limitations and Implications for Research

Several limitations and implications for future research are suggested. First, results may be generalized to universities with a fee-based program and provide suggestions to universities which plan to create a similar program. However, it may not be generalizable to a broader population of college students with learning and attention challenges at the UA or at other universities. Although the goal themes may be common for college students who have learning and attention challenges who fit a similar demographic and/or social-economic status, different findings may emerge based on students' diverse needs from different contexts. For instance, the findings may be very different for ethnic minorities and first-generation college enrollment. Students with limited financial resources with similar learning and attention challenges may not select to enroll in such a program because of the additional fees associated with program participation. Additionally, it is likely that students with very low social-economic status may have goals

that revolve around other priorities such as financing their education, shelter and food security, and other essential needs (Maslow, 1943). Second, a limitation to this study is the sample size, which may limit the representative voice of the students identifying goals, therefore increasing the research population would be recommended. Third, only one of the three qualitative survey prompts was analyzed. Future researchers are suggested to investigate the responses to the two other questions: (1) What have you done to achieve their goals? (2) How have you reacted to obstacles in achieving your goals? Lastly, it is recommended to identify other variables (e.g., self-determination, duration time of attending tutors' sessions, times of attending student support specialists' sessions) as potential predictors of academic success (e.g., learning outcomes, GPA). A prediction model could lead to other non-cognitive factors that could be used to gain greater understanding of the whole student experience, while informing University administrators and specialists on more effective and specific services that target specific needs, foster student growth, and improve academic performance.

Implications for Practice

Although the implications may not be universally applicable, it would still be important for the researchers and learning center directors to share these and related findings with other campus professionals so that greater awareness is provided to those who interact, support, and teach students with learning and attention challenges, but who do not necessarily have particular expertise in this student population. At the very least, this greater understanding could help clarify misunderstandings and demystify some of the common myths about students with SLD and ADHD.

It would also be important for the learning center leadership team to provide training for student support specialists, tutor coordinators, and the student employee team. First, the team could provide knowledge of self-determination, the theory, and its components. Second, the team could facilitate professional development sessions on how to model establishing (*Thinking*), pursuing (*Doing*), and overcoming obstacles (*Adjusting*) when students complete their goals. Examples of such may include backwards planning, visualization techniques, use of technology prompts, and distinction between long- and short-term goals.

For student support specialists and tutor trainers, the study results can facilitate their discussions with students who have learning and attention challenges. Aligned with the training content, recommended content of discussions is suggested to include (a) perceptions about the support that students currently have and the support that students will need to be successful when pursuing their goals; (b) perceptions about students' responsibility to think, do, and adjust when they set and purse their goals; and (c) students' goals related to majors and minors, as well as specific goals of the courses and assignments enrolled in each term. Thus, learning specialists and tutor trainers can explore and address students' differentiated needs to further implement promising intervention strategies and support students to achieve their goals.

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Table 1

Gender, Disability, and Ethnic Groups

Groups	Number (*n*)	Percentage (%)
Gender		
Male	374	58.3
Female	260	40.6
None disclosure	7	1.1
Disability		
SLD	113	17.6
Comorbidity	103	16.1
ADHD	185	28.9
Others	18	2.8
None disclosure	222	34.6
Ethnicity		
African American	15	2.3
Asian/Pacific Islander	29	4.5
Native American	9	1.4
Hispanic	58	9.0
White	500	78.0
Two or more ethnicities	18	2.8
None disclosure	12	2.0
Total Number of Participants	641	100.0

Table 2

Two Domains of the AIR Scale

Domains	Definitions	Sub-Scales	Content
Capacity	Explore knowledge, abilities, and perceptions that enable to be self-determined and feel good about it.	Things I Do (TID)	Measures perceptions of ability
		How I Feel (HIF)	Measures perceptions of self-awareness
Opportunity	Assess chances to use knowledge and abilities at school and at home	What Happened at School (WHAS)	Measures perceptions of opportunities offered at school
		What Happened at Home (WHAH)	Measures perceptions of opportunities offered at home

Table 3

Means and Standard Deviations of Overall and Sub-Scale Scores

	Total	Two Domains		Three Stages		
		Capacity *M (SD)*	Opportunity *M (SD)*	Thinking *M (SD)*	Doing *M (SD)*	Adjusting *M (SD)*
Overall	3.86 (.49)	3.69 (.55)	4.03 (.57)*	4.00 (.49)*	3.76 (.60)	3.83 (.56)

Note. *$p<.01$

Table 4

Percentage of Participants in Three Levels

Levels	Total	Two Domains		Three Stages		
		Capacity	Opportunity	Thinking	Doing	Adjusting
Never-Almost Never	4.7%	9.2%	4.2%	2.7%	9.0%	6.2%
Sometimes	52.2%	61.3%	37.9%	40.4%	52.9%	49.5%
Almost Always-Always	43.1%	29.5%	57.9%	56.9%	38.1%	44.3%

Table 5

Gender Differences

Gender	Total	Two Domains		Three Stages		
		Capacity *M (SD)*	Opportunity *M (SD)*	Thinking *M (SD)*	Doing *M (SD)*	Adjusting *M (SD)*
Female	3.91 (.48)*	4.10 (.54)	3.57 (.63)*	4.04 (.47)	3.84 (.60)*	3.87 (.55)
Male	3.82 (.49)	3.98 (.59)	3.54 (.59)	3.96 (.50)	3.70 (.60)	3.80 (.57)

Note. *$p<.01$

Table 6

Ethnicity Differences

Ethnicity	Total *M (SD)*	Two Domains		Three Stages		
		Capacity *M (SD)*	Opportunity *M (SD)*	Thinking *M (SD)*	Doing *M (SD)*	Adjusting *M (SD)*
African	4.04 (.50)	4.13 (.54)	3.83 (.56)	4.12 (.55)	4.00 (.57)	4.02 (.50)
Asian	3.75 (.50)	3.81 (.65)	3.47 (.66)	3.82 (.59)	3.72 (.58)	3.73 (.52)
Native	3.69 (.22)	3.69 (.65)	3.52 (.63)	3.88 (.35)	3.57 (.50)	3.61 (.44)
Hispanic	3.91 (.52)	4.12 (.59)	3.55 (.67)	4.06 (.49)	3.82 (.62)	3.86 (.62)
White	3.85 (.49)	4.03 (.57)	3.54 (.59)	4.00 (.48)	3.74 (.60)	3.83 (.56)
More	3.98 (.39)	4.11 (.38)	3.72 (.67)	4.01 (.34)	3.91 (.59)	3.99 (.48)

Note. **p*<.01

Table 7

Disability Differences

Disability	Total *M (SD)*	Two Domains		Three Stages		
		Capacity *M (SD)*	Opportunity *M (SD)*	Thinking *M (SD)*	Doing *M (SD)*	Adjusting *M (SD)*
SLD	3.97 (.49) *	4.12 (.57)*	3.69 (.64)	4.05 (.50)	3.92 (.62)*	3.96 (.54)*
Comorbidity	3.85 (.48)	4.00 (.55)	3.43 (.61)	3.98 (.48)	3.73 (.61)	3.83 (.57)
ADHD	3.77 (.49)	3.95 (.57)	3.54 (.61)	3.94 (.47)	3.64 (.60)	3.73 (.56)

Note. **p*<.01

Table 8

Themes, Categories, and Sub-Categories

Themes	Categories	Sub-Categories
Academic Goals (55%)	Attending College (33%)	Graduating from High School Acceptance to College Transition from High School to College
	Success in College (65%)	Successful First Year Maintaining a Good GPA Declaring a Major Improving Academic and Study Skills Graduating from College
	Pursuing Advanced Learning (2%)	Applying to Graduate School Enrolling in a Professional Program
Health Goals (28%)	Physical Health (37%)	Eating Healthier Doing Physical Fitness
	Mental Health (20%)	Developing Self-Awareness Becoming Independent Building Self-Advocacy Skills
	Social Relationship (28%)	Spending Time with Family/Friends Joining a Team Making New Friends
	Leisure Engagement (15%)	Artistic Pursuit Language-Based Hobby Athletic Activity
Employment and Finance Goals (17%)	Job and Career (65%)	Short-term Job Targets Long-term Career Goals
	Finance Goals (35%)	Saving Money Earning Money Spending Money