

Setting Students up for Success: Academic Skills Before and After Participation in 2-4-8, a Proactive Advising Model for Students with Disabilities

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Abstract

Disability support (DS) offices provide accommodations for and serve qualified students with disabilities. The overall number of students with disabilities in higher education is increasing, creating a need for high-impact, effective support. Proactive advising is a method of support that provides college students tools for success before crises occur. Most proactive advising for students with disabilities focuses on a narrow population (e.g., students with ADHD or learning disabilities). However, DS offices serve a diverse array of diagnoses. 2-4-8 is a proactive advising model in which all students with documented disabilities meet individually with a DS staff member at least three times in the fall semester to ensure that accommodations, supports, and skills necessary for success in higher education are in place. This study was a preliminary investigation of perceived academic skills before and after participation in 2-4-8. Initial findings indicate that self-reported organization, time management, professor communication, and studying were significantly improved through 2-4-8, and that perceptions of test taking, self-advocacy, and meeting deadlines were slightly, though non-significantly, improved. This study provides promising evidence that 2-4-8 could be a useful resource to provide proactive, quality support that meets the diverse needs of college students with disabilities.

Keywords: academic skills, proactive advising, students with disabilities, 2-4-8

Since the passing of the Americans with Disabilities Act in 1990, higher education institutions have been mandated to provide accommodations for students with disabilities. In 2008, 88% of higher education institutions reported enrolling students with disabilities (Raue & Coopersmith, 2011). The vast majority of colleges and universities have since created a disability support (DS) office to provide accommodations and services for students with disabilities. These offices serve a significant portion of the student population. Overall, about 19% of undergraduates report having a disability (Snyder et al., 2019). In a review of students with disabilities across college campuses, an average of 271 students were registered with the DS office at medium-sized colleges (1,500 - 9,999 total students). However, the number of students registered with the DS office ranged from 17 to 1,300 (Scott, 2017). This significant variation

between universities makes it difficult to generalize how many students with disabilities utilize support from a DS office at any given institution. Nonetheless, the overall number of students with disabilities is increasing across university populations (Easby & Hamilton, 2019; Sachs & Schreuer, 2011). With an increasing number of students receiving services through a DS office, DS offices must ensure they are supporting students efficiently and effectively.

DS offices support students with a wide range of disabilities, which can span from mental health issues, to sensory impairments, to learning disabilities, to executive dysfunction, to traumatic brain injuries, to chronic health conditions, to autism spectrum disorders (ASD), and to physical impairments. Similar to the range in number of students registered with a DS office, the range of disabilities, impairments, and strengths varies widely among students. DS pro-

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professionals must have a good understanding of all disabilities so they can tailor support to a student's individual strengths and challenges (D'Alessio & Banerjee, 2016).

Students with disabilities are at higher risk than their non-disabled peers; they are more likely to drop out before attaining a degree and to take longer to attain a degree (Becker & Palladino, 2016; Hinz et al., 2017). While all students encounter challenges in higher education, students with disabilities experience additional challenges rooted in their disability (Hong et al., 2007). For example, a student with a learning disability may need more time to process and learn new information in classes than their non-disabled peers, or a student with a chronic health condition may need to spend more time addressing their health before attending to academics.

DS offices are created to serve this high-risk community. Yet, DS staff also often feel overwhelmed. In a survey sent to DS staff members, only a third of respondents reported that their workload was just right and more than half of respondents reported they spend time outside of office hours to complete basic work (Scott, 2017). These statistics reveal that DS staff continually feel behind in their work to support a high-risk population.

Given that DS offices are tasked with providing accommodations and supporting students with disabilities, that the number of students with disabilities is increasing, that students with disabilities are more likely to struggle compared to their non-disabled peers, and that DS staff often feel behind in their work, more attention must be paid to how DS offices support students with disabilities.

Proactive Advising and Academic Skills

Academic skills are conceptually defined by behavioral, attitudinal, and problem-solving skills that allow students to be successful in the academic environment. All college students, no matter the presence of disability, must have academic skills to excel in higher education. While some students enter college with all of the academic skills necessary for success, others require additional guidance to learn academic skills. Students with disabilities are more likely to need such guidance because they encounter additional challenges rooted from their disability.

Students with disabilities were more likely to successfully complete college if they utilized extracurricular supports (Los Santos et al., 2019; Newman et al., 2019). Proactive advising is a common form of extracurricular support. In proactive advising, sometimes also called academic advising, intrusive advising, or academic coaching, an advisor or qualified

staff member works with a student on skills that are considered essential to academic success. While proactive advising has multiple models and approaches, overall the focus is to assist students with identified disabilities to gain the skills necessary for academic success (D'Alessio & Banerjee 2016). These skills are categorized under academic skills.

What topics do proactive advising cover? In a qualitative study, students with disabilities were asked what topics proactive advising should cover. Themes from their responses included campus integration, experience in disability management and adaptation, and academic strategies (Fleming et al., 2018). Similarly, in a review of topics covered in proactive advising with students with disabilities, the areas of time management and utilization of resources were frequently highlighted (Button et al., 2019). These topics can also be encompassed by skills that typically fall under the domain of academic skills. Academic skills include a combination of learning strategies, such as study skills and reading strategies, and psychosocial strategies, such as self-advocacy and motivation. Academic skills, covered in proactive advising, are essential for academic success in higher education.

Although some research points to the potential benefits of proactive advising, little research has been conducted to determine the outcomes of proactive advising for students with disabilities. Some research suggests that participation in group-based proactive advising decreases severity of Attention Deficit Hyperactivity Disorder (ADHD) symptoms and increases use of academic skills (LaCount et al., 2015; Stevens et al., 2019). One study investigating proactive advising for students with ADHD and learning disabilities found that students who received proactive advising had higher GPAs than those who did not receive such support (Du Paul et al., 2017). Most of the research in this area focuses on the needs of students with ADHD and learning disabilities whereas all students with disabilities need to have core adult learning skills to be successful in higher education.

2-4-8 Proactive Advising Model

2-4-8 is a proactive advising model designed to fill this gap by teaching academic skills to college students with any disability. In 2-4-8, students with documented disabilities meet individually with a DS staff member at least three times in the fall semester to ensure all accommodations, supports, and skills necessary for success are in place. 2-4-8 is named thusly because students meet individually with a DS staff member two, four, and eight weeks after receiving their letter of accommodation. These Week

2, Week 4, and Week 8 meetings are the minimum; students can meet with DS staff at other times to follow up on a specific issue or work on a skill targeted in a 2-4-8 meeting.

Students with many different categories of disabilities participate in 2-4-8. Categories of disabilities range from ADHD, to sensory impairments, to mental health disorders. To ensure that each student's unique needs are met, it is vital for staff to understand disability and tailor support to each individual student (D'Alessio & Banerjee, 2016). This need for tailoring is why 2-4-8 is housed in the DS office and not in other student support offices, such as advising or tutoring.

The 2-4-8 model has several overarching goals, including (a) ensuring that each student has the academic and organizational skills necessary for success, (b) confirming that each student understands and utilizes accommodations and supports, and (c) building a rapport with each student so that the student comes back before a moment of crisis.

To ensure that all students enrolled in 2-4-8 meet these goals, Week 2, Week 4, and Week 8 meetings have a semi-structured interview format. Each meeting includes a list of preset questions tailored to meet the individual needs of students. The structure of Week 2 meetings is more rigid than the subsequent meetings; Week 4 and Week 8 meetings allow for more individual follow-up based on discussions in previous meetings. This format ensures that all students are asked about fundamental academic skills, while also allowing for personalization to meet the strengths and needs of each individual student. In Week 2, Week 4, and Week 8 meetings, DS staff members ask students questions about academic skills, such as organization, professor communication, time management, studying, meeting deadlines, self-advocacy, test taking, family communication, motivation, and writing. The questions that DS staff ask students that get to these academic skills include: How are you going to organize yourself and remember all due dates this semester? Are you using your organizational system each day? What other campus supports do you believe you will need to utilize this semester? Have you begun using these supports, and if so, were these meetings effective? How are you utilizing your accommodations for each class? How do you plan to study for your upcoming test? What is your plan to write a paper due soon? Have you been late to any classes? Have you been able to turn in assignments on time? If not, what was the issue that impeded you meeting your deadline? How can we resolve this issue? Have you gotten any grades or professor feedback yet? Do you know how to communicate with your professor

if you have any concerns about your feedback? Have you discussed with your family what feedback you have received?

The three required meetings are a balance between the average of 1-2 meetings a DS staff has with a student each semester (Scott, 2017) and the average seven meetings between an academic coach and a student each semester (Button et al., 2019). The number of three meetings as a minimum requirement balances quality with quantity, and the spread of these meetings over half of a typical semester allows the DS staff member to get to know and build rapport with each student on an individual level. The three required meetings also allow for DS staff to have a higher caseload than an academic coach who may be required to meet every other week with a student throughout the semester.

All meetings are conducted individually for 30 minutes. This meeting time length allows for the balance between meeting an individual student's needs and supporting as many students as possible (Scott, 2017). Students are expected to prepare for each meeting, and are emailed instructions on how to prepare for each meeting a week before the meeting.

If, after the student completes the three required meetings, there are no indicators of potential issues *and* there is no follow-up required or requested, the staff member then discusses with the student how to continue seeking support if they wish. Most often, there are a few follow-up meetings to work on academic and organizational skills that need improvement. These skills most often involve time management, study skills, test taking strategies, organization of major assignments, and communication with professors.

2-4-8 is a unique proactive advising model for college students with disabilities because it serves students with any type of disability. It has the potential for DS to provide quality support to a high volume of high-risk students. Research to date indicates that proactive advising is useful for students with disabilities. To begin examining the effectiveness of this proactive advising model, descriptive and correlational analyses examined perceptions of academic skills before participation in 2-4-8. Then academic skills before and after participation in 2-4-8 were compared. This study asked: What do academic skills look like in students with disabilities? Is there an increase in academic development after participation in 2-4-8? If so, which academic skills are increased? The academic skills investigated here include self-reports of organization, professor communication, time management, studying, meeting deadlines, self-advocacy, test taking, family communication, motivation, and writing.

Methods

Procedure

To begin assessing the effectiveness of the 2-4-8 proactive advising model, a pragmatist paradigm was utilized for this non-experimental, longitudinal, correlational design. In this study, components of descriptive and correlational analyses were used to assess academic skills before and after participation in 2-4-8.

All students who participated in 2-4-8 were qualified, current students; they were eligible to receive accommodations and requested to receive accommodations in the current semester. All students who were enrolled in the 2-4-8 program and were 18 or older were invited to participate in the study via email. All research procedures were approved by the University's Institutional Review Board. This study included two self-report surveys that were emailed to potential participants before meeting with DS staff through 2-4-8 and at the end of the semester. The pre-survey was sent to enrolled students before their first 2-4-8 meeting. The pre-survey collected demographic information and self-perceptions of level of expertise in academic skills. An invitation to participate in the post-survey was sent to enrolled students at the end of the semester. The post-survey collected information about changes to their disability-related symptoms and another self-evaluation of academic skills. Students did not need to complete the previous surveys to participate. For example, a student could participate in the post-survey only. All participants were assigned a randomized subject ID code and data were analyzed after the completion of the semester. This protected the confidentiality of students. DS staff did not know if the students they worked with participated in the study and researchers were not knowledgeable of student identity when conducting analyses.

Statistical Analysis Plan

Academic skill information collected through the pre- and post-surveys were investigated in this study. Participants self-reported expertise with each academic skill on the 5-point Likert scale (1= specific weakness, 5= particular strength). Participants were also asked on the post-survey which skills they perceived were increased through participation in 2-4-8. The academic skills that participants self-evaluated included organization, writing, test taking, studying, time management, professor communication, family communication, self-advocacy, motivation, and meeting deadlines. Operational definitions of each academic skill are as follows:

1. Organization: choosing and implementing a single organizational method to stay on top of all assignments
2. Writing: transposing thoughts effectively into the written word
3. Test Taking: utilizing correct test taking strategies during a timed examination
4. Studying: organizing time to effectively and efficiently study and choose methods of studying best suited for test and subject matter
5. Time Management: organizing time and balancing academic and social demands to provide enough time to complete each task
6. Professor Communication: student-driven communication with professor regarding disability accommodations and course content
7. Family Communication: communication with family about academics
8. Self-advocacy: student-driven communication to advocate for academic needs
9. Motivation: identifying motives to complete assignments and stay on task
10. Meeting Deadlines: turning in assignments on time.

While most academic skills were targeted in 2-4-8, the skill of writing was not targeted. This variable provides a look into discriminant validity; writing should not be increased through participation in 2-4-8 as it was not targeted in the 2-4-8 model. Additionally, some academic skills are emphasized more through 2-4-8. While some skills (e.g., time management, organization, professor communication, meeting deadlines, and self-advocacy) are heavily targeted at all 2-4-8 meetings, other skills (e.g., test taking, family communication, motivation, and studying) are discussed in only one 2-4-8 meeting and not as heavily emphasized. Certain skills are emphasized more because they are both crucial for academic success and often decreased in students with disabilities.

Each academic skill was investigated in three ways to provide a comprehensive investigation of self-perceptions of these academic skills. First, academic skill perceptions were assessed by the percentage of students who responded that the academic skill was increased through participation in 2-4-8. Second, the percentages of students who rated each academic skill as a strength or particular strength on the pre- and post-surveys were compared. Finally, a paired-samples t-test was conducted for each academic skill to determine statistical significance.

Results

Participants

In Fall 2018, 156 students were enrolled in 2-4-8 at a medium-sized private university in the Mid-Atlantic region and were eligible for participation. From this population, 87 students responded to the pre-survey and 47 students responded to the post survey. However, only 37 of the participants responded to both the pre- and post-survey. This study's sample included the 37 participants who responded to both pre- and post-surveys.

This sample was split equally by gender (51.35% of participants identified as male and 48.64% as female). The majority identified as White (72.97% identified as White, 18.92% as African-American, 10.81% as Hispanic, 5.41% as Asian, and 2.72% as Middle Eastern). Respondents were allowed to respond to more than one category for race. Half of the participants were first year students (51.35% freshman, 18.92% sophomore, 16.22% junior, 13.51% graduate). Respondents were diagnosed in a number of distinct yet non-exclusive disability categories: 48.65% of students responded they were diagnosed with and receiving services for ADHD, 48.65% learning disability, 27.03% psychological disability, 13.51% ASD, 5.41% visual impairment, 5.41% hearing impairment, 5.41% mobility impairment, and 2.70% traumatic brain injury. Over one third (37.84%) self-identified as having diagnoses in two or more disability categories. It is also important to note that disability symptoms were not stagnant; 21.62% of students reported experiencing a change in their mental or physical health during the semester.

The majority of this sample completed all 2-4-8 meetings (83.78%) while a few (16.22%) partially completed the program with one or two meetings. Overall, the majority of students (56.76%) met with DS more than the three required meetings and a third (35.14%) met with DS staff weekly. When asked if they found 2-4-8 helpful, 78.38% of respondents reported that 2-4-8 was helpful. Most importantly, all but one student (97.39%) would recommend 2-4-8 to an incoming student. Even if a student did not find it helpful, they would recommend it to an incoming student. This shows that students still see the value in the program even if it didn't help them personally.

From this sample, only 8.11% withdrew from one or more classes. This is in part because students utilized the assistance of other support offices on campus when necessary. 91.89% of students utilized support outside of DS (72.97% reported using professor office hours; 51.35% Writing Center; 37.84% Counseling Center; 29.73% tutoring; 27.03% Math Center).

Academic Skills

First, students were asked what academic skills they believed had increased through participation in 2-4-8. See Table 1 for a visual representation of the number and percentage of participants who responded that skills had increased on the post-survey. The majority of the students responded that time management (67.74%), organization (61.29%), and professor communication (58.06%) had increased through participation in 2-4-8. Many students also responded that meeting deadlines (45.16%), self-advocacy (45.16%), test taking (41.94%), and studying (41.94%) had increased through participation in 2-4-8. Few students responded that writing (19.35%) and family communication (12.90%) were increased through participation in 2-4-8. Writing and family communications are not emphasized in 2-4-8, and therefore the small percentages of students reporting growth in these areas supports the validity of these data.

Second, the difference between the percentages of participants who responded that an academic skill was a strength or particular strength on the pre- and post-surveys was calculated. Table 2 includes a table of the percentages and the differences between pre- and post-survey responses. Organization and professor communication had the greatest increases for students who rated these skills as a strength after participation in 2-4-8. Over a fifth (21.72%) more students rated organization as a strength after participation in 2-4-8. Similarly, 21.62% more students responded that professor communication was a strength after 2-4-8. Other skills saw a modest growth for students who responded that the academic skill was a strength after 2-4-8: there was a 13.52% increase in time management, 13.51% increase in studying, 10.82% increase in meeting deadlines, and 10.81% increase in both self-advocacy and test taking. Only 2.70% more students responded that family communication was a strength. No more students responded that motivation was a strength after 2-4-8. Finally, 12.70% fewer students responded writing was a skill after 2-4-8.

Third, paired-samples *t*-tests were conducted for each academic skill to determine which skills were significantly changed after 2-4-8. Table 3 includes the results of all of the paired-samples *t*-tests. Organization and studying showed significant increases after 2-4-8. There was a significant difference in organization before ($M = 3.46$, $SD = .96$) and after 2-4-8 ($M = 3.84$, $SD = .93$); $t(37) = -2.67$, $p = .01$. Omega-square was utilized to calculate effect size, finding 14% of the variability in organization can be related to the difference in the mean amount of organization from the pre-survey to the post-survey. This is a medium effect

Table 1*Academic Skills that Participants Responded were Increased Through Participation in 2-4-8 (n=37)*

Academic Skill	<i>n</i>	%
Time management	21	67.74
Organization	19	61.29
Professor communication	18	58.06
Meeting deadlines	14	45.16
Self-advocacy	14	45.16
Test taking	13	41.94
Studying	13	41.94
Motivation	10	32.26
Writing	6	19.35
Family communication	4	12.90

Table 2*Percentage of Students Responding to an Academic Skill as a Strength or Particular Strength (n=37)*

Academic Skill	% Pre-Survey	% Post-Survey	Post-Pre Difference
Organization	45.85	67.57	+ 21.72
Professor communication	56.76	78.38	+21.62
Time management	32.43	45.95	+13.52
Studying	27.03	40.54	+13.51
Meeting deadlines	64.86	75.68	+10.82
Self-advocacy	56.76	67.57	+10.81
Test taking	29.73	40.54	+10.81
Family communication	81.08	83.78	+2.70
Motivation	59.46	59.46	0.00
Writing	47.84	35.14	-12.70

Table 3*Paired-Samples T-test of Academic Skills in the Pre- and Post-Surveys*

Academic Skill	Pre-Survey		Post-Survey		<i>t</i> (36)	<i>p</i>	Omega Square
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Organization	3.46	0.96	3.84	0.93	-2.67	0.01**	0.14
Studying	2.86	1.00	3.30	1.08	-2.46	0.02**	0.12
Time Management	2.81	1.20	3.19	1.18	-2.02	0.05*	0.08
Professor Communication	3.65	0.92	3.95	0.94	-1.93	0.06*	0.07
Test Taking	2.95	0.94	3.24	0.93	-1.87	0.07*	0.06
Self-Advocacy	3.59	0.87	3.84	1.12	-1.43	0.16	
Meeting Deadlines	3.76	0.96	3.97	1.19	-0.94	0.35	
Motivation	3.54	1.04	3.59	1.14	-0.39	0.70	
Writing	3.11	1.05	3.14	1.16	-0.21	0.84	
Family Communication	4.16	0.87	4.14	1.03	0.17	0.87	

Note. ** $p \leq .05$; * $.05 \leq p \leq .07$

size according to Cohen's criteria. There was a significant difference in studying before ($M = 2.86$, $SD = 1.00$) and after 2-4-8 ($M = 3.30$, $SD = 1.08$); $t(37) = -2.4$, $p = .02$. Omega-square was utilized to calculate effect size, finding 12% of the variability in studying can be related to the difference in the mean amount of studying from the pre-survey to the post-survey. This is also a medium effect size according to Cohen's criteria. Finally, there was a difference, through trending in significance, in time management before ($M = 2.81$, $SD = 1.20$) and after 2-4-8 ($M = 3.19$, $SD = 1.18$); $t(37) = -2.02$, $p = .05$. There were also trending, yet non-significant increases in professor communication and test taking before and after participation in 2-4-8. There was no significant change in self-advocacy, meeting deadlines, motivation, writing, and family communication after 2-4-8.

Discussion

In an initial look at this sample, the demographics revealed that this sample was diverse, both in terms of diagnoses and experiences in higher education. This non-homogenous sample meant that some of the demographic information could have had unintentional impacts on results. However, the sample is also reflective of all students enrolled in 2-4-8 and the entire population that DS serves. One important strength of 2-4-8 is that this model serves all students with disabilities; it is not only for a subset of students that a DS office serves. 2-4-8 can help to reach the goal of ensuring that every student with a disability is off to a good start and has the academic skills and supports in place to succeed at the collegiate level.

The majority of student respondents found that 2-4-8 was beneficial. Even more importantly, almost every single respondent indicated that they would recommend 2-4-8 to an incoming student with a disability. This is strong evidence that even if a student did not find 2-4-8 personally helpful, they still saw its benefits for other students. This finding is also in line with the current body of research, which shows that proactive advising is helpful for students (e.g., Button et al., 2019; Fleming et al., 2018). Furthermore, because the overwhelming majority of participants would recommend 2-4-8 to an incoming student, it is worth the effort to implement and evaluate 2-4-8.

Throughout the analysis, three general tiers of academic skills emerged. The first tier of skills includes organization, time management, professor communication, and studying. The skills in the first tier were the main targets in 2-4-8 and showed the largest growth before and after enrollment in 2-4-8. The second tier of skills includes test taking, self-advocacy,

and meeting deadlines, which showed modest, non-significant increases after participation in 2-4-8. The third tier of skills, consisting of motivation, family communication, and writing, includes those skills that were not increased after 2-4-8.

Organization was reported as the academic skill with the greatest increase after participation in 2-4-8; 61.29% of students reported that organization increased through 2-4-8 and 21.72% more students reported organization as a skill after 2-4-8. There was a significant increase in the average response for organization as a strength before and after 2-4-8 with a medium effect size. The reported increase in organization could be tied to sample demographics. Almost half of the respondents reported they were diagnosed with ADHD. Organization is a skill often impaired in students with ADHD, and a skill that is best targeted at the beginning of the semester. Because so many students struggled with organization and 2-4-8 occurred at the best time to target this skill, organization was the academic skill most impacted through 2-4-8.

Studying was also reported as improved after participating in 2-4-8; 41.94% of students reported that studying increased through 2-4-8 and 13.51% more students reported studying as a skill after 2-4-8. There was a significant increase in the average response for professor communication as a strength before and after 2-4-8 with a medium effect size. The percentage of students who reported that studying increased through 2-4-8 mirrors the percentage of the sample with a learning disability (48.65%). Students with learning disabilities not only need to learn how to study for each type of test, but also need to learn to study based on their strengths. Through 2-4-8, the DS staff member asks each student if they have an upcoming test and if so, how they are preparing. Oftentimes, the DS staff member works individually with students to find methods of studying that uniquely fit the type of test and the strengths of each student. Additionally, while students often enter college with study skills in place, these skills are not adequate for college-level courses and assessments. This discrepancy could be why there was a smaller addition of students who reported studying was a skill after 2-4-8, but still many students responded that studying increased through participation in 2-4-8.

Time management was also reported as significantly improved after participating in 2-4-8; 67.74% of students reported that time management increased through 2-4-8 and 13.52% more students reported time management as a skill after 2-4-8. There was a non-significant increase in the average response for time management as a strength before and after 2-4-8. Similar to organization, time management is

impaired in students with ADHD. Additionally, first-year students often struggle with the wide expanses of unorganized time in their first semester at college. Approximately half of the sample identified as being diagnosed with ADHD, and half of the sample indicated they were first-years. This combination could be why time management was improved so greatly through participation in 2-4-8.

The final skill in the first tier, professor communication, was also reported as improved after participating in 2-4-8; 58.06% of students reported that professor communication increased through 2-4-8 and 21.62% more students reported professor communication as a skill after 2-4-8. However, the increase in professor communication before and after 2-4-8 was only trending in significance. As discussed previously, about half of the sample included first-year students, who had not interacted with faculty in the higher education setting before 2-4-8. The 2-4-8 model specifically targets how to talk with professors both about general topics, such as implementing accommodations, and more specific topics related to course content. 72.87% of this sample also utilized professor office hours. The combination of learning skills in 2-4-8 and implementing them by utilizing professor office hours helps to set students up for success.

The second tier of skills includes test taking, self-advocacy, and meeting deadlines. This set of skills was targeted in 2-4-8 and saw modest, if not significant, growth after participation in 2-4-8. Students did report that these skills increased through 2-4-8 (41.94% reported test taking increased, 45.16% self-advocacy, and 45.16% meeting deadlines) and there were more students who reported these skills as a strength after 2-4-8 (+10.81% test taking, +10.81% self-advocacy, and +10.82% meeting deadlines). However, these improvements were not statistically significant. Improvements to the 2-4-8 model should target these academic skills so they can be improved further through participation in 2-4-8.

Finally, the third tier of skills includes skills that were not increased through participation in 2-4-8. This tier includes the skills of motivation, family communication, and writing. Few students reported that these skills were increased through 2-4-8 (32.26% reported motivation increased, 12.90% family communication, and 19.35% writing). There was little, no, or negative change in skills reported as a strength before and after 2-4-8 (+0% motivation, +2.70% family communication, and -12.70% writing). Finally, there was no significant change in response means before and after participation in 2-4-8.

Motivation was not reported as improved through 2-4-8, possibly because motivation was not targeted in 2-4-8. Future training for DS staff and modifications to 2-4-8 should target motivation, such as motivational interviewing. Motivation, while nebulous and difficult to pinpoint, is essential to success both in the academic setting and beyond.

Family communication included unique findings. The vast majority of students (81.08%) responded that family communication was a strength before 2-4-8, with 56.76% of students reporting that they spoke with family members at least every day. Given such high initial findings, there was no room for improvement, even though in the 2-4-8 program DS staff ensured that important academic information was relayed to family.

Writing was included as an academic skill in this study to provide discriminant validity. Writing is an academic skill that students with disabilities can work to improve, but is not targeted in 2-4-8, or even in the DS office. The university where this study was conducted has a Writing Center that is separate from the DS office but is trained by DS office staff to provide writing support to students with disabilities. In 2-4-8, students were referred to the Writing Center in the same way they were referred to the Counseling Center. Therefore, writing should not have improved through participation in 2-4-8. These non-significant findings further support the positive findings that 2-4-8 improved academic skills targeted in the program.

This preliminary study of 2-4-8 had limitations inherent in its non-experimental, pilot study design. The sample size was small, which did not allow analyses to control for the number of meetings or other important demographic information (e.g., diagnosis category, academic standing). Future research should further investigate influencing factors that impact success. In addition to the lack of control variables, the outcome measures in this study included a self-report scale that was not psychometrically tested. Future evaluations of 2-4-8 should include psychometrically tested scales of academic skills, in addition to other measures of academic success, including GPA and retention. Collecting outcome measures from multiple courses would allow for triangulation of data collection and would strengthen the validity of responses collected. Finally, this study only evaluated 2-4-8 at one institution. Future research should look to see if these initial findings are replicated at other colleges and universities. These limitations and directions for future research show that more extensive research needs to be conducted on the potential outcomes and benefits of the 2-4-8 model.

As the number of students with disabilities continues to rise, DS offices must provide proactive support instead of relying on reactive support when crises arise. In part, such support is necessary because proactive support decreases load and intensity of future cases. 2-4-8 is a unique proactive advising model that helps all students with disabilities get off to a good start. This study provides a preliminary investigation into academic skills in students with disabilities before and after participation in a 2-4-8. Overall, findings from this study provide promising indications that perception of academic skills, including organization, time management, studying, and professor communication, are increased after participation in 2-4-8. While this is a preliminary and limited study, findings provide promise that 2-4-8 could be an effective means of support for college students with disabilities. This proactive advising model has potential to provide quality, proactive support for many students with disabilities without overburdening DS staff. It is imperative that future research be conducted to expand the understanding of the benefits of this program.

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