

Learning Disability-informed STEM Mentorship: Mentorship Mechanics and Supports that Extended beyond Academic and Professional Development to Communication and Problem Solving



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Background

- Students with learning disabilities (LD) enroll to post-secondary education at the same rate as the general population, however graduation rates for these students are lower.^{1,2}
- Mentorship is a common support in higher education used to promote academic success. While undergraduate mentorship interventions exist, relatively few are specific to students with disabilities.³
- Disability mentorship should go beyond academics and schooling, be focused on producing responsible and independent individuals, and foster skills in socialization and individual development.⁴
- A paucity of research exists describing the impact of mentorship on problem solving for college students with learning and attention differences.
- Purpose:** (1) identify critical knowledge necessary to provide LD/ADHD informed mentorship, (2) report mentorship communication patterns, (3) identify the roles mentors assumed, and (4) ways in which mentors served to assist mentees in problem solving.

Methods

- Participants included 52 undergraduate students and 57 graduate student mentors
- Undergraduate student and graduate student mentors were involved in a larger study aimed at developing supports for college students with LD/ADHD (CS³LD).
- Data are mentor logs and surveys, 20 transcripts from mentor group discussions, and 30 transcripts from group discussions among undergraduates with LD/ADHD were used to expand areas of problem solving and self-advocacy.
- Quantitative data from mentor surveys was analyzed using Wilcoxon signed rank test for differences between standardized counts (reported # times topic discussed / # meetings per semester) of topics discussed between consecutive semesters.
- Qualitative data were structurally coded, followed by topical coding and further reduced into thematic problem solving themes with subtitles.⁵
- Rigor was enhanced by researchers' continual discussion with research team and lead investigator to achieve consensus on results.

Figure 1. Standardized counts of topics by semester

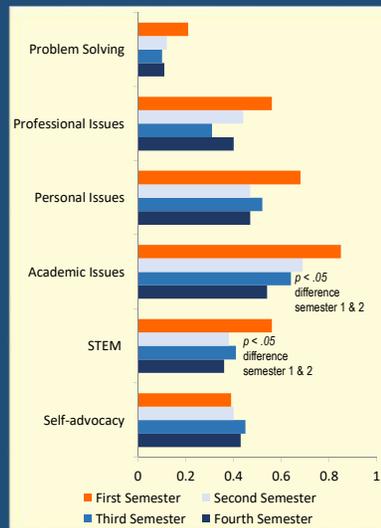


Table 1. Wilcoxon signed rank analysis of standardized counts by Year

Topic (n*)	Overall (SD)	Year one meetings** (SD)	Year two meetings** (SD)	Difference ^z	p-value
Academic issues (49)	61(19)	67(23)	57(23)	-10	.0173
Personal issues (49)	40(25)	45(28)	40(27)	-5	.2379
Professional skills (49)	31(20)	38(27)	29(23)	-9	.0905
STEM-related support (48)	25(18)	35(26)	29(19)	-6	.2837
Problem Solving (35)	14(14)	17(15)	19(22)	+2	.2351
Self-advocacy (47)	24(19)	25(22)	27(21)	+2	.9625

*Mean percentage of meetings
**Mean percentage of meetings by year from dates non-parallel to a year

Results

Table 2. Knowledge needs for mentoring undergraduates with LD/ADHD from 20 graduate student mentor group meetings

Disability-specific information (%)	Approaches for ↑-ing LD/ADHD focused mentorship (%)	Strategies to help mentees with LD/ADHD succeed (%)	General mentorship skills (%)
<ul style="list-style-type: none"> General and on-campus LD/ADHD resources (45%*) Defining LD/ADHD (30%) Accommodation support (30%) Understanding common cognitive styles in LD/ADHD (25%) LD/ADHD symptom manifestation in everyday life (25%) Disclosing LD/ADHD (25%) Maintaining privacy (20%) Common strengths of LD/ADHD (20%) Federal laws that impact LD/ADHD services (10%) 	<ul style="list-style-type: none"> Defining mentorship roles (40%) Sharing personal mentorship experiences (35%) Noticing positive changes in mentees (20%) Barriers to communication (20%) Additional disability-related topical information (15%) 	<ul style="list-style-type: none"> Health system management (40%) Organization & time management (30%) Pushing past personal doubts (30%) STEM professional development (25%) Don't know how to help (20%) 	<ul style="list-style-type: none"> Building relationships with mentees (30%) Strategies for healthy communication (20%) External mentorship supports (20%) Signs of distress (15%)

Problem Solving

Academics

- Academic support
- Accountability
- Campus Resources & Accommodations
- Course Load
- Graduation

Difficulties related to Executive Functioning

- Big Picture Thinking
- Break Things Down
- LD/ADHD Coping
- Organization
- Stress Management
- Time Management

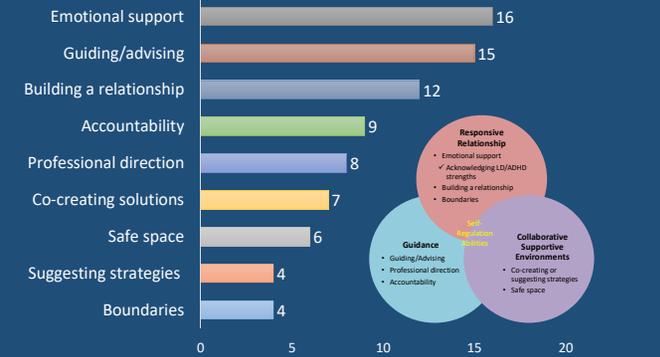
Adult Life Skills

- Communication with Others
- Employment
- Finances
- Life Skills

Students' Disability Context

- Self-advocacy was discussed in terms of scholar's advocating for their own accommodations and overcoming stigma.

Figure 2. Mentorship roles and number of mentor group meetings where the role was discussed and model of co-regulation via mentorship



Conclusion

- Findings illustrates the dynamic nature of the mentorship process and the broad range of academic and psychosocial support afforded by the mentors.
- Mentorship supports initially emphasized academic concerns and guidance related to field of study, but evolved to include greater emphasis on facilitating mentees' communication and problem solving skills.
- Mentors assisted mentees with a range of disability-related challenges, which included obstacles related academics, interpersonal experiences, daily life, and advocacy with instructors and others.

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