

# Research to Practice Brief

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Creating Opportunities for Youth  
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## An Effective Model for College Students With Learning Disabilities and Attention Deficit Hyperactivity Disorders

*By Elizabeth Evans Getzel, Shannon McManus, and Lori W. Briel*

### The Problem

As a result of the increasing number of students with disabilities entering postsecondary education, disability support services offices across the nation are faced with providing more varied and specialized services (Henderson, 1999; Stodden, 2001). Yet there is a limited body of knowledge within the postsecondary education and disability field on what services and specific accommodations are appropriate under various conditions (Eichhorn, 1997; NCSPEs, 2000).

Amid this changing postsecondary environment, students with disabilities frequently feel overwhelmed, resulting in low retention and graduation rates (Getzel, Stodden, & Briel, 2001; Wille-Gregory, Graham, & Hughes, 1995). Further research is needed on the types of supports provided and their impact on the educational outcomes of students with disabilities, as well as on the various models of service delivery.

One such model is a supported-education model for students with disabilities. Students served through this model typically have significant obstacles and life-skill issues (e.g., medication management, personal assistance services, financial assistance, time management) to overcome in order to successfully complete their education. Current supported-education models designed over the past decade have focused on students with psychiatric disabilities or attention deficit disorders (Loewen, 1993; Pettella, Tarnoczy, & Geller, 1996; Unger, 1998) and have not been fully integrated into postsecondary education support systems.

### The VCU Supported-Education Model

The intent of the study conducted by the Virginia Commonwealth University-Rehabilitation Research and Training Center (VCU-RRTC) was to determine the effectiveness of a supported-education model as part of the services offered through the Disability Support Services Office (DSS) and the impact of these services and supports on students' educational outcomes. The model was implemented through the VCU DSS office on both the academic and medical campuses as part of the range of services offered by these offices. The VCU model uses the principles of supported education, which is a consumer-driven, individualized support system utilizing community and university resources.

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The model structures these resources to meet the short-term and long-term goals of students (Cooper, 1993; Egnew, 1993; Unger, 1998).

The model was designed to provide intensive educational supports to a cohort of students with learning disabilities and attention deficit hyperactivity disorders (ADHD). Beginning in the fall semester of 2001 and ending in the fall of 2002, a cohort of 26 students participated in the study. Students with disabilities came to the program either through referral by faculty members or DSS staff or through self-referral. Students were referred as a result of academic problems including failing one or two courses, being on academic probation, or falling behind in their coursework. Students represented undergraduate and graduate students from both the academic and medical campuses.

Once students with disabilities entered the program, academic specialists (staff at the VCU RRTC) worked with them to identify their specific educational support needs. This information was used to develop a student profile on each participant and to develop an Individualized Academic Support Plan. Based on needs identified through the plan, the student and the academic specialist scheduled office visits or communicated by e-mail or telephone to determine the effectiveness of the supports implemented.

## Research Findings

To assess the impact of the model on student outcomes, the study examined the relationship between intensity and frequency of services and student performance and retention. For study purposes, intensity of services was defined as the number of contacts students had with staff members. Contact was defined as office visits, telephone conversations, or e-mail correspondence. Frequency of services was measured by the number of times services and supports were used by students. Students self-reported their use of services and supports during contacts with the staff and during follow-up structured interviews. To compare the results of the students, the cohort of 26 students with disabilities was divided into two groups (frequent and infrequent) at the end of the study period. Eleven students with disabilities were identified as part of the frequent group based on their continual contact with staff members and incorporation of supports into their learning routine. Fifteen of the students were identified as part

of the infrequent group, because they either did not return for follow-up meetings or were in contact with the staff only once or twice during a semester. Post-hoc coding of the data was conducted, examining the intensity and frequency of services received during this time period. After the cohort was divided, a comparison was made between the groups to determine their educational outcomes (i.e., overall GPA, academic progress, and retention).

Comparison analyses were also conducted on the differences within the cohort of students. Variables used in comparison studies were grades, class attendance, types of supports used, the number of resources accessed on campus and in the community, and overall adjustment to college. Data were also collected from structured interviews conducted with each participant. The information collected through the interviews included satisfaction with services, feedback concerning the delivery of services through the supported-education model, strategies and supports that proved useful, and effective university and community resources.

The results discussed in this section will focus on the following data collected during the study:

- Students' self-report of strategies incorporated into their learning routine;
- Students' reasons for participation and nonparticipation; and
- Students' academic outcomes.

Eleven of the students with learning disabilities or ADHD received frequent and intensive services during the study. The services and supports that students reported as being most helpful are described in **Table 1**. Students described incorporating into their learning routine such study skills as writing strategies, proofreading strategies, color-coding of information, developing mnemonics or memory aids, organizational strategies for research articles, and cell charts for organizing information. Role-playing was also a study skill identified by students with disabilities who had a clinical component in their academic course of study. Students were able to practice answering potential questions that they were likely to experience during their practicum experience.

Students also developed personal skills including self-advocacy and stress management. Students worked on better understanding their disabilities by obtaining (a) resources about their specific disability,

**Table 1. Services and Supports Identified by Students in Frequent Group ( $n=11$ )**

<b>Services and Supports</b>	<b>Examples</b>
<b>Study skills</b>	<ul style="list-style-type: none"> <li>• Writing strategies</li> <li>• Proofreading strategies</li> <li>• Color-coding information</li> <li>• Mnemonics for memorization</li> <li>• Test-taking strategies</li> <li>• Time-management strategies</li> <li>• Organizational strategies for research articles</li> <li>• Cell charts and timelines for organizing information</li> <li>• Video-taping for self-evaluation</li> <li>• Role-playing practicum exam questions</li> </ul>
<b>Self-Advocacy Skills</b>	<ul style="list-style-type: none"> <li>• Developing steps within their Academic Plan on how to self-identify to the office of disability support services using the VCU Student Handbook and how to hold discussions with staff members on appropriate strategies for requesting accommodations.</li> <li>• Developing steps within their Academic Plan on initiating the use of accommodations with faculty, and monitoring their use by reviewing students' Academic Plan with staff.</li> <li>• Providing opportunities for students with disabilities to network with one another to discuss their college experiences and the services, supports, or strategies that have proven helpful.</li> </ul>
<b>Personal skills</b>	<ul style="list-style-type: none"> <li>• Better understanding of their disability and its impact on learning</li> <li>• Stress-management skills</li> </ul>
<b>Career exploration</b>	<ul style="list-style-type: none"> <li>• Informational interviewing</li> <li>• Job shadowing</li> <li>• Volunteer work experience</li> <li>• Short-term internship experiences (non-credit) for students with disabilities who might not otherwise qualify for university sponsored internships because of grade point average or lack of internships in their program of study</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Screen-reading software (with study-skill features) for reading, writing, and take-home exams</li> <li>• Voice-recognition software</li> <li>• Personal digital assistants (e.g., Palm Pilots)</li> <li>• Templates for recording information</li> <li>• Modified assessment form using “edit” mode by inserting more specific questions in red font to differentiate student questions from the form</li> <li>• Graphic organizer software</li> <li>• Accountability system in which the student e-mails staff with a weekly schedule</li> </ul>

(b) information on local support groups, and (c) referral information for further evaluation if needed. Students also explored effective ways to disclose information to professors or clinical staff (see **Table 1**). In addition, stress management training was a part of the program.

Some students in the frequent group reported that career exploration activities were extremely helpful in determining their course of study and helping them to focus on their coursework. Students identified informational interviewing, job-shadowing experiences, and work experiences (paid or unpaid) as useful in examining the impact of their disabilities on their career and further defining their career direction.

Students in the frequent group reported that participating in the study gave them a better understanding about themselves and how they learn. Increased exposure to technology programs and software was also extremely beneficial in helping them progress in their program of study. Such software included screen-reading software for reading, writing, and test-taking; voice-recognition software for writing; and personal digital assistants for time management and organization. The person-centered, student-directed philosophy of the program helped students take responsibility for developing and implementing their educational supports.

Staff members followed up with e-mails and telephone messages to the 15 students with disabilities who were not fully participating in the program.

Some of the reasons that students did not frequently participate included personal life issues (7 students), the program did not meet their needs (3 students), and students needed only short-term strategies (2 students). There were 3 students who left the study with no further contact information available.

A comparison of academic outcomes and the average GPA between the two groups (see **Table 2**) revealed that 8 of the 11 students in the frequent group progressed in good standing in their course of study. Of these 8, 1 student graduated, 2 were on the dean's list, and 5 progressed in their program in good standing. One student was dismissed from the program, but not from the university. None of the students were placed on academic probation or warning, and 2 students left VCU for personal reasons. In comparison, 8 of the 13 students in the infrequent group progressed in their program in good standing, 1 student was dismissed from the program (not from the university), and 4 were placed on academic probation or warning. At the end of semester, GPAs for the two groups showed a significant difference, with the frequent group averaging 3.03 compared to 2.29 for the infrequent group.

## Conclusion

This study provides initial results on the services and supports provided through a supported-education model for students with learning disabilities and ADHD and the impact on students' educational outcomes. However, some limitations should be

**Table 2. Academic Outcomes** ( $n=24$ )

Outcomes	Frequent (n=11)	Infrequent (n=13)
Graduated	1	0
Progressing in program (dean's list)	2	0
Progressing in program (good standing)	5	8
Dismissal from program	1	1
Academic warning/academic probation	0	4
Left school for other reasons than academic (financial, personal, etc.)	2	0

noted. Further studies are needed on larger numbers of students with disabilities to determine the effectiveness of the model and the services provided. Comparison data are needed to determine the outcomes of students who receive services through a supported-education model versus those who do not. Additionally, the model must also be tested in a variety of postsecondary settings including two- and four-year colleges and universities.

The results of the study indicate that for some students experiencing academic problems, the access to services and supports through a supported-education model can be beneficial. However, personal issues still remain significant barriers for students with disabilities to fully participate in higher education. A majority of the students who did not fully participate in the study had personal issues that prohibited them from doing so. Further efforts are needed to (a) prepare students with disabilities enrolled in postsecondary programs to manage their personal needs and supports, and (b) explore institutional changes that will enhance the availability and delivery of services. In addition, future research should utilize a rigorous design that controls for the presence of personal issues and group differences.

Although the number of students with disabilities entering postsecondary education has increased, issues and challenges prevent some from successfully completing their degree programs. Continued research can clarify the range of educational supports needed, the specific accommodations appropriate, and the critical institutional structures required for students with disabilities to successfully progress in their programs of study and remain in higher education.

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Authors Elizabeth Evans Getzel, Shannon McManus, and Lori W. Briel are with the Virginia Commonwealth University Rehabilitation Research and Training Center on Workplace Supports.

## Recommended Resources

### VCU Professional Development Academy (PDA)

<http://www.students.vcu.edu/pda>

The PDA Web site provides additional information about the supported education program and other services and supports provided for students with disabilities, families, faculty, administrators, and other staff members.

### National Center for the Study of Postsecondary Educational Supports (Rehabilitation Research & Training Center)

<http://www.rrtc.hawaii.edu>

This site includes information about training and conferences related to postsecondary educational supports, plus numerous research reports produced by the staff of this national center.

### Health Sciences Students with Disabilities Faculty Education Project

<http://www.healthsciencefaculty.org/>

Oregon Health Sciences University's Center on Self-Determination is a valuable resource for Health Science Educators. The Health Sciences Students with Disabilities Faculty Education Project is one of 22 projects funded by the U.S. Department of Education, Office of Postsecondary Education. All of these projects have a common theme: providing tools to faculty to help them effectively teach their increasingly diverse student population, particularly students with disabilities.

### National Center on Secondary Education and Transition

Institute on Community Integration (UCEDD),  
University of Minnesota, 6 Pattee Hall,  
150 Pillsbury Dr. SE, Minneapolis, MN 55455

Tel: 612.624.2097; Fax: 612.624.9344;

Web: <http://www.ncset.org>;

E-mail: [ncset@umn.edu](mailto:ncset@umn.edu)

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6 Pattee Hall, 150 Pillsbury Drive, SE  
Minneapolis, MN 55455

