This study analyzed symptom complaint patterns and perceived academic impairment in a sample of 189 university students diagnosed with various learning disorders (LD). Each participant underwent an extensive standardized assessment battery and was diagnosed according to the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association. Participants also completed the Adult Learning Difficulties Assessment, a 123-item survey assessing perceived impairment in reading, writing, spelling, mathematics, listening, concentration, memory, organizational skills, sense of control, and anxiety. Analysis of variance revealed significant differences in level of perceived academic impairment between the LD groups, with the Attention Deficit Hyperactivity Disorder group reporting the most perceived impairment. Specific symptom complaint patterns for each learning disorder, along with limitations of the study and implications for future research, are discussed. (Author/SLD)
Symptom Complaint Patterns in College Students with Learning Disabilities

By Steven Kane and Crystal Joy
Symptom Complaint Patterns in College Students with Learning Disabilities

Steven T. Kane, Ph.D.
Disability Resource Center
California Polytechnic State University, San Luis Obispo

Crystal Joy
Psychology and Child Development Department
California Polytechnic State University, San Luis Obispo

Abstract
This study analyzed symptom complaint patterns and perceived academic impairment in a sample of 189 university students diagnosed with various learning disorders. Each participant underwent an extensive, standardized assessment battery and was diagnosed according to DSM-IV-TR standards. Participants also completed the Adult Learning Difficulties Assessment, a 123-item survey assessing perceived impairment in reading, writing, spelling, mathematics, listening, concentration, memory, organizational skills, sense of control and anxiety. Analysis of variance revealed significant differences in level of perceived academic impairment between the LD groups, with the ADHD group reporting the most perceived impairment. Specific symptom complaint patterns for each learning disorder, along with limitations of the study and implications for future research, are discussed.

According to a 1999 study by the American Council on Education, students with learning disorders are attending college in unprecedented numbers (Henderson, 1999). In fact, as many as four percent of college students and 10 percent of adults nationwide suffer from a learning disorder (American Psychiatric Association, 1994). Although a great deal of recent research has focused on the etiology of learning disorders, little research has been conducted exploring how symptom complaint patterns may prove predictive of a learning disability. This is important because analysis of symptom complaint patterns may help clinicians render better diagnoses. Moreover, a greater understanding of how perceived academic impairment varies by learning disability type can help practitioners target interventions at specific skill deficits.

Method
Two hundred twenty-nine students referred to a university-based learning disorders clinic were randomly assigned to one of three doctoral-level clinicians for assessment of a possible learning disorder. Participants underwent an extensive, standardized assessment battery and were diagnosed according to DSM-IV-TR standards. For the purposes of data analysis, 189 students were classified into one of six categories: Reading Disorders, Disorders of Written Expression, Math Disorders, Attention Deficit Hyperactivity Disorders (ADHD), Learning Disorders- Not Otherwise Specified (LD, NOS), and those diagnosed as “negative.” Participants diagnosed with psychological disorders and disorders other than the above learning or attentional disorders were excluded from the present study.

Participants also completed the Adult Learning Difficulties Assessment (ALDA), a 123-item survey assessing perceived impairment and difficulties with reading, writing, spelling, mathematics, listening, concentration, memory, organizational skills, control and anxiety
(Schmidt, 1997). Participants rated each item (e.g. “I don’t retain much of what I read”) on a 5-point Likert scale ranging from 5, “Agree Completely” to 1, “Disagree Completely.”

Because of the often omnipresent and overarching nature of ADHD symptomology, it was hypothesized that this group would report the highest levels of perceived academic impairment (i.e., “symptom complaints”).

**Results**

To facilitate data analysis, ALDA Profile Elevation scores were used in the analysis of variance. The Profile Elevation score is simply a grand mean summary score for all ALDA subscales for a respondent. Profile Elevation scores (as well as subscale scores) range from “1” to “5”, with five reflecting higher self-perceived impairment.

ANOVA revealed significant differences in level of perceived academic impairment between the groups, with the ADHD group reporting the highest levels of perceived impairment (see tables 1 and 2). Specific symptom complaint patterns for each learning disability are also presented (see table 3).

**Table 1**

<table>
<thead>
<tr>
<th>Disability</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>19</td>
<td>3.42</td>
<td>.48</td>
</tr>
<tr>
<td>LD, NOS</td>
<td>26</td>
<td>3.01</td>
<td>.55</td>
</tr>
<tr>
<td>Negative Diagnosis</td>
<td>73</td>
<td>2.98</td>
<td>.63</td>
</tr>
<tr>
<td>Reading Disorder</td>
<td>36</td>
<td>2.89</td>
<td>.44</td>
</tr>
<tr>
<td>Disorder of Written Exp.</td>
<td>21</td>
<td>2.89</td>
<td>.56</td>
</tr>
<tr>
<td>Math Disorder</td>
<td>13</td>
<td>2.77</td>
<td>.60</td>
</tr>
</tbody>
</table>

**Table 2**

**Analysis of Variance for Mean Profile Elevation Scores**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4.754</td>
<td>5</td>
<td>.951</td>
<td>3.015</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57.393</td>
<td>182</td>
<td>.315</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62.147</td>
<td>187</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Specific Symptom Complaint Patterns; By Disability Type

(Range: 1-5; 5 = highest level of perceived impairment).

Attention Deficit Hyperactivity Disorders: (Profile elevation: 3.42)
1. General concentration/memory 4.11
2. Time management/procrastination 4.10
3. Task focus 4.06
4. Time issues in class 3.95
5. Reading processing 3.79

Learning Disorder, NOS: (Profile elevation: 3.01)
1. Time issues in class 3.79
2. Task focus 3.45
3. Anxiety 3.41
4. Reading processing 3.34
5. General time issues 3.33

Negative Diagnosis: (Profile elevation: 2.98)
1. Time management/procrastination 3.61
2. Time issues in class 3.60
3. Task focus 3.59
4. General concentration/memory 3.56
5. General time management 3.37

Reading Disorder: (Profile elevation: 2.89)
1. Time issues in class 3.73
2. Anxiety 3.36
3. Reading processing 3.34
4. Writing-spelling issues 3.31
5. General time management 3.29

Disorder of Written Expression: (Profile elevation: 2.89)
1. Writing-spelling issues 3.57
2. Time issues in class 3.50
3. Task focus 3.44
4. Reading processing 3.40
5. General reading 3.35

Math Disorder: (Profile elevation: 2.77)
1. Organization 3.81
2. Time issues in class 3.57
3. Anxiety 3.38
4. Math-symbolic processing 3.19
5. General math calculations 3.15
Discussion

As hypothesized, the ADHD group reported significantly higher levels of perceived academic impairment than the other disability groups. Also as expected, perceived academic impairment decreased as the learning disability narrowed in focus (i.e. math learning disorders were less broadly impairing than reading disorders).

The symptom complaint patterns presented in Table 3 are especially telling. Note that while those diagnosed “negative” were ranked third in terms of perceived academic impairment, their symptoms tell a story of procrastination and poor time management skills, and not LD-related symptoms per se. Also noteworthy, for example, are the high “organizational” and “anxiety” scores for those diagnosed with math learning disabilities. Interventions directed at increasing the organizational skills of, and reducing the anxiety experienced by, math learning disabled students could prove to be useful instructional strategies. Not only do these symptom complaint patterns provide important clues for interventional strategies per group, they also support the validity structure of the ALDA and thus its use as an individualized interventional “map” for each respondent.

This exploratory study has important limitations including the use of a relatively young college-age sample, lack of IQ/aptitude covariate analyses, and lack of correlational analysis of perceived academic impairment with actual Grade Point Average. Ongoing research by the authors has sought to remedy these limitations with larger sample sizes and broader data collection strategies. Future research may also include longitudinal analysis of perceived academic impairment with college graduation rates.

References


Questions regarding this research should be addressed to: Dr. Steven Kane, Disability Resource Center, Bldg. 124-233, Cal Poly, San Luis Obispo, Ca 93407. E-mail: skane@calpoly.edu
III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

Send this form to the following ERIC Clearinghouse:

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
1100 West Street, 2nd Floor
Laurel, Maryland 20707-3398

Telephone: 301-497-4080
Toll Free: 800-789-3742
FAX: 301-953-0263
E-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com

EFF-088 (Rev. 9/97)
PREVIOUS VERSIONS OF THIS FORM ARE OBSOLETE.