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Accommodation Decision Making for Postsecondary Students With Learning Disabilities: Individually Tailored or One Size Fits All?

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Abstract

Clinicians uniformly recommend accommodations for college students with learning disabilities; however, we know very little about which accommodations they select and the validity of their recommendations. We examined the assessment documentation of a large sample of community college students receiving academic accommodations for learning disabilities to determine (a) which accommodations their clinicians recommended and (b) whether clinicians' recommendations were supported by objective data gathered during the assessment process. In addition to test and instructional accommodations, many clinicians recommended that students with learning disabilities should have different educational expectations, standards, and methods of evaluation (i.e., grading) than their nondisabled classmates. Many of their recommendations for accommodations were not supported by objective evidence from students' history, diagnosis, test data, and current functioning. Furthermore, clinicians often recommended accommodations that were not specific to the student's diagnosis or area of disability. Our findings highlight the need for individually selected accommodations matched to students' needs and academic contexts.

Keywords

learning disabilities, assessment, accommodations, modifications, college students

Students with learning disabilities face many challenges as they pursue higher education. They are less likely to earn a regular high school diploma than their nondisabled classmates (68% vs. 78%) and are more than twice as likely to drop out of high school prior to graduation (19% vs. 7%; Cortiella, 2013). Students with learning disabilities are also significantly less likely to attend postsecondary institutions (Newman et al., 2011). Their academic skills are typically below average; as many as 50% of adults with learning disabilities earn scores below the 16th percentile on measures of reading and mathematics (Gregg, 2012). Once in college, students with disabilities report significantly more problems than their classmates understanding lectures, completing assignments, and performing well on exams (Heiman & Precel, 2003). They experience more anxiety associated with school and spend more hours studying to keep up with their coursework (Trainin & Swanson, 2005). Students with learning disabilities are also more likely than their classmates to require remedial instruction or special tutoring to help them meet the demands of the curriculum. Overall, these students have been described as underserved and unprepared for postsecondary education (Gregg, 2007).

Federal laws assist students with disabilities as they transition to college. In primary and secondary school, the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) entitles students to special education and other services to help them achieve their highest potential. In college, however, IDEIA no longer applies. Instead, most postsecondary students are protected by the Americans with Disabilities Act Amendments Act (ADAAA, 2008) and Section 504 of the Rehabilitation Act (1973), which prevent others from discriminating against them because of their disability (Taymans, 2012). Unlike IDEIA, which promotes children's *success* through high school, ADAAA and Section 504 ensure adults' *access* to higher education, but do not guarantee successful outcomes (Lovett, Nelson, & Lindstrom, 2014).

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To prevent discrimination, ADAAA (2008) and Section 504 require colleges to provide students with disabilities "reasonable accommodations" to their education. Accommodations adjust the manner in which students with disabilities learn or are evaluated so that they can access and demonstrate knowledge equal to their peers (Ofiesh, 2007). Accommodations must remove restrictions to students' participation in educational activities without changing students' learning experiences, lowering academic standards, or threatening the validity of exam scores (Gregg & Lindstrom, 2008; Lovett, 2014). Accommodations generally fall into two categories. Instructional accommodations alter the manner in which students learn (e.g., a scribe to take notes during class, permission to record lectures). Test accommodations alter the manner in which students demonstrate their learning (e.g., additional time for exams, use of a word processor or calculator during exams; Gregg, 2012). The law does not differentiate learning disabilities from other disabling conditions, nor does it specify what accommodations colleges must provide (Taymans, 2012). In the case of most disabilities (e.g., vision, hearing, orthopedic impairment), appropriate accommodations are straightforward (e.g., Braille text, sign language interpreter, wheelchair access). In the case of learning disabilities, selecting accommodations can be difficult (Newman et al., 2011).

Accommodation Decision Making

Ultimately, accommodation decisions are made by disability specialists at each college (Banerjee, Madaus, & Gelbar, 2014). To help make these decisions, disability specialists rely on the evaluation and recommendations of psychologists and other professionals with expertise in the assessment and accommodation of adults with learning disabilities (Lovett et al., 2014). These professionals evaluate a student with suspected disabilities, render a diagnosis, and make recommendations regarding which accommodations are warranted, under which settings, to mitigate the student's condition (Roberts, 2012). Recent U.S. Department of Justice (DOJ, 2010) regulations direct disability specialists to accept the reports and recommendations of these professionals to facilitate students' access to the accommodations they require. The regulations also specify,

> When an applicant's documentation demonstrates a consistent history of a diagnosis of a disability, and is prepared by a qualified professional who has made an individualized evaluation of the applicant, there is little need of further inquiry into the nature of the disability and generally testing agencies should grant the requested modification, accommodation, or aid.

Given the high degree of trust the DOJ guidelines place on the diagnostic impressions and recommendation of clinicians, it is reasonable to investigate their validity (Lovett, 2014). Previous research has already called into question the validity of many clinicians' diagnoses (Sparks & Lovett, 2009a). For example, Sparks and Lovett (2009b) reviewed the documentation of 378 college students diagnosed with learning disabilities. Less than one half of students met criteria for a learning disability and less than 7% of students met criteria of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*) for a learning disorder. Similar results were obtained in a second study, involving 336 postsecondary students diagnosed with learning disabilities (Sparks & Lovett, 2013). More than 40% of students did not meet any criteria for a learning disability, regardless of the criteria employed.

Although these studies cast doubt on the validity of clinicians' diagnoses, diagnostic labels are important to college students only to the degree they translate into tangible academic accommodations. Unfortunately, we know very little about the accommodations afforded to college students with learning disabilities.

Most important, we do not know the frequency of accommodations that clinicians recommend. The National Longitudinal Transition Study (NLTS-2) provides the best data regarding accommodations for students with disabilities in higher education (Newman et al., 2011). This study followed a nationally representative sample of students with documented disabilities as they transitioned from secondary to postsecondary institutions. Although most (87%) students received accommodations in high school, few (19%) sought accommodations in college. Most students enrolled in 2-year colleges, community colleges, or technical schools. The most common accommodations that students' received were additional time on tests (79%), access to special technology (37%), tutoring (37%), testing in a separate room (19%), a reader, interpreter, or in-class aide (17%), and a scribe/note taker (17%). These findings are similar to the results of an earlier study (Sharpe, Johnson, Izzo, & Murray, 2005). However, these studies did not differentiate students with learning disabilities from students with other disabling conditions, such as vision, hearing, or orthopedic impairments. These studies also do not tell us what accommodations clinicians recommended for students who never disclosed their disability and sought accommodations in college.

Furthermore, we do not know if the accommodations that clinicians recommend are supported by objective evidence gathered during their evaluations. Although accommodation decision making need not be conducted in an actuarial manner or follow a rigid formula, it should be based on data gathered as part of the assessment processes (Gregg, 2007, 2012). Several comprehensive models for accommodation decision making in higher education have been developed in recent years (Gregg & Lindstrom, 2008; Lindstrom, 2007; Ofiesh, 2007; Ofiesh, Hughes, & Scott, 2004). These models emphasize four sources of information

that should be considered when selecting accommodations. First, clinicians must consider the student's history, especially a previous diagnosis of a learning disability, a referral for special or remedial education, or the provision of accommodations in primary or secondary school. Indeed, recent DOJ (2010) guidelines emphasize the importance of previous diagnoses or accommodations when determining the appropriateness of accommodations in college. Furthermore, disability specialists regard a history of special education or accommodations as the most important factor in determining whether accommodations are warranted in postsecondary settings (Banerjee et al., 2014).

Second, clinicians must determine if the student currently has a learning disability. If so, he or she should render a clear diagnosis and provide evidence supporting that diagnosis. In a recent survey, a current learning disability diagnosis or classification was required by nearly 90% of disability specialists before students could be provided with accommodations in college (Madaus, Banerjee, & Hamblet, 2010). The diagnosis is important because it indicates which academic skills potentially require accommodation. For example, a student with a learning disability in mathematics may require accommodations on math assignments and exams, but not on tests in other subjects (Ofiesh et al., 2004).

Third, clinicians should determine the impact of the student's diagnosis on his or her current functioning. According to ADAAA (2008) and corresponding guidelines (Equal Opportunity Employment Commission, 2011), a disability is "a substantial limitation in major life activities compared to most people in the general population." A diagnosis alone is insufficient to determine whether an individual merits accommodations; he or she must also display functional deficits in academic skills that limit participation in coursework, exams, or other educational requirements (Gordon, Lewandowski, & Keiser, 1999; Lovett, Gordon, & Lewandowski, 2009). Without evidence of impairment, there is no need for accommodations. Normative deficits in reading, mathematics, or writing provide strong evidence of current limitations in academic skills compared to other individuals in the general population (Brueggemann, Kamphaus, & Dombrowski, 2008). In fact, a normative deficit in academic skills is a central criterion in the *DSM-5* definition for specific learning disorder (American Psychiatric Association, 2013).

Fourth, clinicians should consider the results of psychological testing to determine which accommodations will best address the student's limitations. The student's academic fluency and cognitive processing scores are especially important; they allow clinicians to select accommodations that address specific areas of weakness (Lindstrom, 2007). For example, deficits in reading fluency or processing speed might require additional time on exams that involve reading (Gregg, 2009b; Ofiesh et al., 2004). Alternatively, deficits in math fluency and working memory might be mitigated by access to a calculator during exams involving math (Gregg, 2012; Ofiesh, 2007).

Altogether, accommodation decision making requires clinicians to integrate historical, diagnostic, functional, and test data to understand each student's current abilities. At the same time, clinicians must consider how the student's limitations should be mitigated in specific academic contexts. A student might require accommodations for certain activities, but not others. Lindstrom (2007) cautions against a "one-size-fits-all mindset" of accommodation selection in favor of carefully selected accommodations that meet the needs of specific students for specific educational experiences, assignments, and exams (Lindstrom, 2007, p. 234).

Accommodation decision making, therefore, must be tailored to each student's area of disability and the demands of their coursework (Gregg, 2011). For example, a clinician who recommends that a student be given additional time on tests that require reading should base her recommendation on (a) a history of reading disability, special education, or previous reading accommodations, (b) a current diagnosis of a reading disability or disorder, (c) objective evidence of current limitations in reading, and (d) test data suggesting the need for additional time. Alternatively, a clinician who recommends accommodations for a mathematics disability should base his recommendation on the student's history, diagnosis, test data, and evidence of impairment specific to math. It would be problematic to award accommodations to a student without such objective evidence. It would be equally problematic to award reading accommodations to a student with math disabilities or math accommodations to a student with reading problems (Gregg, 2011; Ofiesh et al., 2004).

Indiscriminate Accommodations in Higher Education

Unfortunately, some clinicians may recommend accommodations indiscriminately, either without sufficient objective evidence of a disability or without considering each student's limitations in specific academic contexts. In the first instance, a clinician might recommend reading accommodations to a student without a history of reading problems, a current diagnosis, or corroborating test data and functional impairment. In the second instance, a clinician might diagnose a student with a reading disability and recommend a wide range of accommodations that may not be directed at the student's specific areas of impairment (e.g., additional time on *all* exams).

Clinicians may recommend accommodations in an indiscriminate manner because they have a genuine desire to help struggling students, but they misunderstand the laws governing the provision of accommodations in higher education and. In an early study, Gordon, Lewandowski,

Murphy, and Dempsey (2002) assessed clinicians' knowledge of the Americans with Disabilities Act. Although all of the clinicians conducted assessments for adults with learning disabilities, more than one third of clinicians incorrectly asserted that the law required colleges to provide accommodations that guaranteed students' success in college. Nearly 30% of clinicians incorrectly asserted that the purpose of a clinical evaluation for adults seeking accommodations is to help them secure the accommodations they desire. Nearly 20% of clinicians believed that it was appropriate to diagnose a learning disability to help students obtain test accommodations, even if the data did not support a learning disability diagnosis. Similar results were obtained in a more recent survey of clinicians with expertise in the assessment of adults with learning disabilities (Harrison, Lovett, & Gordon, 2013). Nearly one half of clinicians asserted that the purpose of conducting evaluations was to secure accommodations for clients who requested them. The researchers concluded that many clinicians view their role as advocates for their clients, regardless of the historical, diagnostic, and test data gathered during their evaluations.

The Current Study

The current study has two objectives. First, we wanted to determine what accommodations clinicians typically recommend for college students with learning disabilities. Based on previous research involving students with disabilities in general, we expected certain accommodations to be most prevalent, such as additional time on exams, access to technology, and testing in a separate room. However, we also worried that many "accommodations" recommended by clinicians actually reflect modifications to students' course requirements or instructors' methods of assessment (Phillips, 1994). Unlike accommodations, which allow students equal access to educational experiences and exams, modifications alter the expectations of students who receive them or the academic standards of the colleges that administer them (Gregg, 2009a; Ofiesh & Bisagno, 2008). Examples of modifications include creating different assignments or exams for students with disabilities than their classmates, allowing students with disabilities to resubmit work or retake tests without penalty, or employing a special grading scale for students with disabilities.

Second, we wanted to know if clinicians' recommendations for accommodations are supported by objective evidence gathered during the assessment process. We suspected that many of these recommendations are made in the absence of such evidence. When based on objective data and tailored to meet the needs of individual students, accommodations can allow students with disabilities to learn and to demonstrate their learning fairly, by removing barriers to their education (Gregg, 2012). When administered without support or in an indiscriminate manner, accommodations can yield test scores that overpredict knowledge or performance, give students an unfair advantage over their classmates, expend limited resources, and erode academic standards (Lovett, 2010, 2014).

We reviewed the documentation students submitted to the disability office of a large, 2-year college. All students had been diagnosed with a learning disability and were receiving accommodations for that condition. First, we calculated the frequency of each accommodation that clinicians recommended in their most recent evaluation report (see Note 1). Second, we examined the validity of the most frequently recommended accommodations. To assess the validity of each accommodation, we determined the percentage of students who showed evidence of (a) a history of learning disabilities, special education, or accommodations, (b) a current learning disability diagnosis, (c) objective test data, and (d) current impairment in academic skills. Accommodations supported by historical, diagnostic, psychometric, and functional evidence would support the validity of clinicians' decisions (Banerjee et al., 2014). A lack of such evidence would suggest the indiscriminate provision of accommodations and the need to revisit the practice of accommodation decision making in higher education.

Method

Participants

Participants were 359 community college students (57.9% female). All students had been diagnosed with learning disabilities and were receiving accommodations for this condition. The age of participants ranged from 18 to 59 years (M = 22.5 years, SD = 5 years). Ethnicities included White (65%), African American (19%), Latino (12%), and Asian American (4%).

Participants were classified based on their type of learning disability. Approximately 22.3% were diagnosed with an unspecified learning disability, 20.1% with disabilities in reading and written expression, 10.0% with reading disability only, 8.6% with disabilities in reading and mathematics, 7.2% with mathematics disability only, 5.8% with writing disability only, and 5.0% with disabilities in mathematics and writing. Approximately 21% of participants were not diagnosed with a learning disability during their most recent evaluation, but they had been diagnosed with a learning disability or received accommodations during childhood or adolescence. Approximately 31.1% of students were diagnosed with another psychiatric disorder. The most common comorbid conditions were attention-deficit/hyperactivity disorder (ADHD; 21.1%), a communication disorder (e.g., speech or language problems; 8.1%), mood disorders (5.1%), and anxiety disorders (5.0%).

Students attended a public, 2-year college located in a large midwestern city. Total enrollment was 30,000 students. Average class size was 19 students. The student population was approximately 55% female and 627% White. Approximately 37.6% of students were enrolled full-time. Average age of students in the population was 27 years. Tuition was $136 per credit hour. Average annual tuition and fees was $4,175. Approximately 73% received a federal Pell grant or other need-based financial aid. The college adhered to an open admissions policy; no specific test scores or high school GPA were required to enroll.

Procedure

Participant selection. Potential participants were identified by the disability office of the college. Inclusionary criteria were (a) current enrollment in at least one academic course, (b) previous or current diagnosis of a learning disability or disorder, (c) submitted documentation to the college's disability office, and (d) received academic accommodations because of a learning disability. Exclusionary criteria were (a) comorbid diagnosis of an intellectual, cognitive, or developmental disability, (b) comorbid diagnosis of vision or hearing impairment, (c) English as a second language, or (d) international student status.

Disability specialists identified students who met criteria for the study and provided redacted documentation to the researchers for each student. The researchers culled data from each student's documentation, including (a) gender, (b) age, (c) ethnicity, (d) age of symptom onset, (e) age of first diagnosis, (f) history of special education or accommodations, (g) current diagnoses, (h) results of cognitive and achievement testing, and (i) academic accommodations or modifications recommended by clinicians.

Accommodations and modifications. Two research assistants independently reviewed each student's documentation data. The reviewers determined which accommodations, if any, were recommended by clinicians who conducted the student's most recent comprehensive evaluation. Each reviewer used a checklist of possible accommodations for college students with learning disabilities (see Gregg, 2009a). Test accommodations included (a) additional time, (b) use of technology (i.e., calculator, spellcheck, speech-to-text and text-to-speech software, word processor), (c) access to a reader, (d) testing in a separate room, (e) use of a dictionary or thesaurus, (f) use of outlining rubrics for essays/papers, and (g) additional rest breaks. Instructional accommodations included (a) special tutoring, (b) access to recorded books or e-books, (c) scribe, (d) permission to record lectures, (e) preferential seating, and (f) preferential registration.

Reviewers also determined if clinicians recommended any modifications to testing or instruction that did not appear on the accommodations checklist (Gregg, 2009a). Two test modifications were identified: modified assignments/exams and modified grading. Modified assignments/exams included (a) simplified written directions or permission to ask questions during the exam, (b) alternative format exams (e.g., no essay exams, no papers, access to a word bank during exams), (c) shortened length of exams or papers, (d) dividing assignments, exams, or papers into smaller parts, (e) access to notes or formulas during exams, and (f) unspecified modifications to exams. Modified grading included (a) the ability to resubmit essays/papers without penalty, (b) the ability to retake tests without penalty, and (c) use of different grading scales to evaluate work. One instructional modification was identified: access to professors' lecture notes or a study guide during lectures.

Objective criteria for accommodations. Reviewers determined if each student met various objective criteria that might support the provision of accommodations. A rationale and an operational definition for each criterion are presented below.

History of learning disabilities. Learning disabilities are neurodevelopmental disorders that typically emerge during childhood or early adolescence (American Psychiatric Association, 2013). Although learning disabilities may not be identified until adulthood, a history of academic failure, referral for testing, placement in special education, or provision of accommodations during the elementary or secondary school years could support clinicians' recommendation for accommodations in college (Banerjee et al., 2014; Gregg, 2009b). Therefore, in our study, we considered this criterion met if students provided evidence of any of the following prior to beginning college: (a) a diagnosis of learning disability/disorder, (b) participation in special education, (c) an individualized education program, 504 plan, or summary of performance, or (d) receipt of accommodations in school or on college entrance exams.

Current diagnosis. DOJ (2010) guidelines suggest that accommodations should be granted to college students with disabilities contingent on a current diagnosis from a qualified professional. Indeed, most colleges require a specific diagnosis prior to the provision of accommodations (Madaus et al., 2010). In our study, we considered this criterion met if clinicians diagnosed students with a specific learning disorder or disability in their most recent comprehensive evaluation. Although all students had been diagnosed with a learning disability or disorder at some point in the past (typically during primary school), students met this criterion only if their clinician diagnosed them with a learning disorder or disability at their most recent evaluation. For students with accommodations on specific types of tests (e.g., math tests), the diagnosis must be specific to

that domain of academic achievement (e.g., mathematics disorder/disability). For students with unspecified accommodations (e.g., unspecified additional time), any learning disability diagnosis would meet this criterion.

Ability–achievement discrepancy. The ability–achievement discrepancy method of learning disability identification was widespread prior to the implementation of IDEIA (Hale, Naglieri, Kaufman, & Kavale, 2004). Furthermore, a significant ability–achievement discrepancy is a primary component of the *DSM-IV* criteria for learning disorder (American Psychiatric Association, 2000). Although the discrepancy method has limited reliability and validity (Sternberg & Grigorenko, 2002) and is not required by either federal law or *DSM-5*, it is still frequently used by clinicians (Kavale & Flanagan, 2007). In our study, this criterion was met if a student's achievement composite score was at least one standard deviation lower than his or her cognitive ability composite score. Reviewers also coded the magnitude of the discrepancy (i.e., 1 *SD*, 1.5 *SD*, 2 *SD*). For students with accommodations on specific types of tests (e.g., math tests), the discrepancy must be specific to that domain of academic achievement (e.g., an ability–mathematics discrepancy). For students with unspecified accommodations (e.g., unspecified additional time), any significant discrepancy would meet this criterion.

DSM-IV criteria. The *DSM-IV* criteria for learning disorders are twofold (American Psychiatric Association, 2000). First, the individual must earn a standard score on a measure of reading, mathematics, or written language that is substantially below his or her cognitive ability. Second, the person must show impairment in academic skills. The first criterion reflects the notion that individuals with learning disabilities show achievement that is unexpected given their cognitive ability. The second criterion reflects the legal definition of a disability: a condition that substantially limits major life activities compared to other people in the general population (ADAAA, 2008). It is not sufficient for a person to show relative deficits in academic skills; he or she must also show normative deficits that limit academic functioning (Lewandowski, Lovett, & Gordon, 2009; Lovett et al., 2009).

Unfortunately, *DSM-IV* does not operationalize these diagnostic criteria. Following the practice of previous researchers (Sparks & Lovett, 2009b, 2013; Weis, Sykes, & Unadkat, 2011), we considered the *DSM-IV* criteria to be met if students showed (a) a ≥ 1.5 *SD* ability–achievement discrepancy and (b) an academic achievement composite >1 *SD* below the mean. For students with accommodations on specific types of tests (e.g., math tests), the discrepancy and low achievement score must be specific to that domain of academic achievement (e.g., an ability–mathematics discrepancy and low math score). For students with unspecified accommodations (e.g., unspecified additional time), any significant discrepancy and low achievement score would meet these criteria.

DSM-5 criteria. *DSM-5* requires individuals with learning disabilities to show academic skills that are substantially and quantifiably below those expected from someone the same age (American Psychiatric Association, 2013). Furthermore, the individual's low academic skills must interfere with academic performance or daily living. *DSM-5* indicates that standard scores ≥ 1.5 *SD* below the mean usually meet these criteria. However, a more liberal cutoff (i.e., ≥1 *SD*) might be substituted if the person has a documented history of learning problems. *DSM-5* also requires learning disorders to reflect "specific" deficits in academic achievement rather than more global cognitive problems. Consequently, individuals with learning disorders must have intellectual functioning within normal limits (i.e., IQ > 70). Finally, *DSM-5* requires symptom onset in childhood or adolescence.

In this study, we operationalized *DSM-5* criteria as (a) an academic achievement composite ≥1 *SD* below the mean, (b) no evidence of intellectual impairment (i.e., IQ>70), and (c) self-reported symptom onset prior to age 18 years. For students with accommodations on specific types of tests (e.g., math tests), the low achievement score must be specific to that domain of academic achievement (e.g., a low math score). For students with unspecified accommodations (e.g., unspecified additional time), any low achievement score would meet this criterion.

Cognitive processing or fluency deficits. Learning disabilities are associated with underlying cognitive processing deficits that impair academic skills (Swanson, 2009). Many experts see underlying cognitive processing deficits as essential to diagnosing and accommodating learning disabilities in adults (Gregg, 2009b, 2012; Gregg, Coleman, Davis, Lindstrom, & Hartwig, 2006). Indeed, 95% of university disability specialists require or strongly prefer data regarding students' cognitive processing skills when making accommodation decisions (Madaus et al., 2010).

Several authors provide excellent reviews of the underlying cognitive processing deficits associated with learning disabilities (see Flanagan, Ortiz, Alfonso, & Mascolo, 2006; Swanson, Harris, & Graham, 2013). Some common deficits include problems with phonetic coding, rapid automatic naming, and general auditory processing (especially for reading and writing deficits), visual processing and working memory (especially for mathematics deficits), and overall language skills, listening comprehension, long-term retrieval, and processing speed (important for all academic domains). Unfortunately, there is no consensus regarding which cognitive processing deficits correspond to each type of learning disability. Consequently, this criterion was satisfied if a student's documentation showed any normative deficit (i.e., standard score ≤ 85) on any composite measure

of cognitive processing (i.e., auditory or visual processing; language; listening comprehension; short-term or working memory; long-term retrieval, processing speed; rapid automatic naming; phonemic awareness, phonetic decoding).

Accommodations are also sometimes warranted because of normative deficits in academic fluency. Deficits in reading, math, or writing fluency are often associated with underlying cognitive processing problems, especially deficits in processing speed and working memory (Flanagan et al., 2006). Deficits in reading, math, and writing fluency allow clinicians to select accommodations specific to each academic domain (Lindstrom, 2007). For example, normative deficits in reading fluency might require additional time on exams that require extensive reading, whereas normative deficits in math fluency might require additional time on exams involving computations (Gregg, 2012; Ofiesh, 2007). Therefore, this criterion was also satisfied if the student's documentation provided evidence of any normative deficit (i.e., standard score ≤ 85) in reading, math, or writing fluency or an academic fluency composite. We allowed any fluency deficit to satisfy this criterion to provide clinicians with the benefit of the doubt regarding their accommodation decision making.

Comorbid disorders. Sometimes, accommodations may be warranted to compensate for comorbid psychiatric conditions (Gregg, 2009b). For example, a student's capacity for in-class note taking may be compromised by symptoms of ADHD, a communication disorder, or depression/anxiety. Reviewers determined whether each student's documentation provided evidence of a comorbid diagnosis and coded the diagnosis. To meet each criterion, students must have been diagnosed with a specific disorder at the time they recommended the accommodation.

Reliability. Interrater reliability was calculated using the percentage agreement between the two reviewers. Agreement for categorizing students' accommodations ranged from .94 to .97. Agreement for students' diagnoses ranged from .91 for comorbid psychiatric conditions to .96 for learning disability/disorders. Agreement for specific cognitive processing and academic achievement scores ranged from .91 to .97. Agreement for symptom onset was .96. All discrepancies were resolved by discussion.

Table 1. Recommended Accommodations and Modifications for College Students With Disabilities.

Accommodation/modification	Percentage
Test accommodations/modifications	
Additional time on exams	89.7
50% additional time	54.0
Unspecified additional time	24.0
100% additional time	9.5
Unlimited additional time	2.2
Use of technology during exams	69.4
Calculator	47.9
Word processor	29.8
Spellcheck only	23.7
Speech-to-text (STT) software	8.9
Text-to-speech (TTS) software	8.4
Modified assignments/exams	52.9
Simplified directions, ability to ask questions	15.3
Unspecified modified assignments	11.7
Alternative format (e.g., no essays, papers)	10.8
Shortened length of exams or papers	8.1
Break up assignments into smaller parts	5.3
Access to notes/formulas during exams	1.7
Reader	46.0
Separate room	26.2
Grading modifications	10.9
Can resubmit papers without penalty	6.1
Can retake tests without penalty	3.1
Different grading rubric	1.7
Access to dictionary/thesaurus	8.6
Outlining software for papers	6.4
Additional breaks	6.1
Instructional accommodations/modifications	
Access to professor's notes/study guide	25.3
Notes only	20.6
Notes and study guide	2.8
Study guide only	1.9
Tutoring	24.8
Recorded books	17.8
Scribe/in-class note taker	13.4
Preferential seating	11.4
Permission to record lectures	8.1
Preferential registration	4.2

Note. Only accommodations/modifications recommended in more than 1.5% of reports are shown.

Results

Clinicians' Recommendations

Table 1 shows the most frequently recommended test accommodations and modifications for college students with learning disabilities. Nearly 90% of clinicians recommended additional time, with 50% additional time being the most common duration of the extension. Nearly one fourth of clinicians did not specify how much additional time students should receive. Almost 70% of clinicians recommended access to technology during exams, with the use of a calculator during math exams and use of a word processor or spellcheck during essay exams most common. Access to a reader during exams and testing in a separate room were also frequently recommended. Nearly 53% of clinicians recommended exam modifications in addition to test accommodations. The most common modification was the

use of simplified instructions or the ability to ask the professor questions about test items. More than 10% of clinicians recommended grading modifications especially the ability to resubmit papers or retake exams without penalty.

Table 1 also shows the most frequently recommended instructional accommodations and modifications for students with learning disabilities. The most common instructional accommodation was access to special tutoring, followed by the use of recorded books, a scribe, and preferential seating. Approximately one fourth of clinicians recommended that professors provide students with their lecture notes or a study guide to help prepare for exams.

Support for Additional Time Accommodations

Table 2 shows the percentage of students meeting objective criteria for additional time on exams. Among students whose clinicians recommended additional time on exams requiring reading, 56.7% had a history of reading problems in childhood and 80% had a current diagnosis of a reading disability. Fewer than one half of students showed a significant ability–reading discrepancy, met *DSM-IV* or *DSM-5* criteria for reading disorder, or showed normative deficits in reading fluency or cognitive processing.

Among students whose clinicians recommended additional time on exams requiring mathematics, 72% had a history of math difficulties and 84% had a current diagnosis of a mathematics disability. Slightly more than one half of students showed a significant ability–math discrepancy or met *DSM-5* criteria for mathematics disorder. Fewer than one half of students met *DSM-IV* criteria for mathematics disorder or showed a normative deficit in math fluency or cognitive processing.

Relatively few clinicians (n = 11) recommended additional time on exams requiring writing. Approximately 81.8% of students receiving this recommendation had a history of writing problems or a current diagnosis of a writing disability. Fewer than one half of students showed a significant ability–writing discrepancy, met *DSM-5* criteria for a writing disorder, or displayed a normative deficit in writing fluency or cognitive processing. No student met *DSM-IV* criteria for disorder of written expression.

Most clinicians (75.8%) did not specify the type of exam for which students should receive additional time. Therefore, we examined whether there was evidence supporting the provision of additional time on tests requiring all three academic skills. Approximately 68.8% of students whose clinicians recommended unspecified additional time had a history of any learning disability. Approximately 78.3% of these students were currently diagnosed. Slightly more than one half of students showed a significant ability–achievement discrepancy in at least one academic domain or met *DSM-5* criteria for reading disorder. However, fewer than one half of students met *DSM-5* criteria for a learning disorder in mathematics or writing. Most students did not meet *DSM-IV* criteria for any learning disorder, and most did not show a deficit in any domain of academic fluency or cognitive processing.

Support for Other Test Accommodations

Table 2 also shows the percentage of students meeting objective criteria for other tests accommodations (see Note 2). Between 67% and 70% of students whose clinicians recommended reading accommodations (e.g., a reader, recorded books) had a history of reading problems in childhood. Between 58% and 75% of these students were currently diagnosed with a reading disability. Approximately one half of students whose clinicians recommended reading accommodations met *DSM-5* criteria for reading disorder, and approximately one half of these students showed normative deficits in reading fluency or cognitive processing. Most students did not show a significant ability–reading discrepancy or meet *DSM-IV* criteria for reading disorder.

Most students whose clinicians recommended use of a calculator on math exams had a history of math problems in childhood (67.3%) or a current diagnosis of a mathematics disability (53.5%). Slightly more than one half of these students met *DSM-5* criteria for mathematics disorder. Relatively few students showed a significant ability–mathematics discrepancy, met *DSM-IV* criteria, or displayed normative deficits in math fluency or cognitive processing.

Between 69% and 83% of students whose clinicians recommended accommodations on essay exams had a history of writing problems. Between 56% and 65% were currently diagnosed with a writing disability. However, most of these students did not meet any other objective criteria for accommodations.

Support for Instructional Accommodations

The percentage of students meeting objective criteria for various instructional accommodations are presented in Table 3. Between 33% and 70% of students had a history of learning disorders in childhood or adolescence. Between 20% and 62% were currently diagnosed with a learning disability. Most students whose clinicians recommended instructional accommodations did not meet *DSM-IV* or *DSM-5* criteria for a writing disability that might interfere with note taking. Less than 19% of these students displayed normative deficits in writing fluency or cognitive processing. Relatively few were diagnosed with ADHD, a communication disorder, or any other psychiatric condition that might interfere with instruction.

Discussion

Clinicians often recommend accommodations for college students with learning disabilities. Despite their popularity, we do not know the frequency of the accommodations they

Table 2. Percentage of Students Meeting Objective Criteria for Test Accommodations.

	Criterion													
			Discrepancy			*DSM-IV* criteria			*DSM-5* criteria			Fluency/processing deficit			
Accommodation	History	Diagnosis	1 *SD*	1.5 *SD*	2 *SD*	R	M	W	R	M	W	R	M	W	*n*
Additional time															
Unspecified	68.8	78.3	53.3	33.8	16.5	16.5	16.2	17.3	52.9	46.7	48.2	44.5	29.0	16.9	272
On reading exams	56.7	80.0	43.4	33.3	10.0	33.3	—	—	40.0	—	—	46.7	—	—	30
On math exams	72.0	84.0	56.0	28.0	4.0	—	28.0	—	—	58.0	—	—	36.0	—	25
On essay exams	81.8	81.8	45.5	9.1	9.1	—	—	0.0	—	—	36.4	—	—	9.1	11
Reading															
Reader	70.3	70.9	41.2	21.8	10.9	22.4	—	—	56.4	—	—	44.8	—	—	165
Separate room	68.1	58.5	39.4	26.2	12.8	25.5	—	—	50.0	—	—	50.0	—	—	94
Recorded books	67.2	75.0	43.8	31.3	18.8	28.1	—	—	48.4	—	—	45.3	—	—	64
Simplified directions	69.1	63.6	29.1	21.8	3.6	21.8	—	—	52.7	—	—	47.3	—	—	55
Text-to-speech	70.0	73.3	40.0	26.7	13.3	26.7	—	—	63.3	—	—	56.7	—	—	30
Mathematics															
Use of calculator	67.3	53.5	39.5	22.7	4.1	—	20.9	—	—	58.7	—	—	34.3	—	172
Written language															
Word processor	70.1	62.6	40.2	24.3	8.4	—	—	20.6	—	—	48.6	—	—	19.6	107
Spellcheck	72.9	64.7	45.9	31.8	10.6	—	—	25.9	—	—	45.9	—	—	18.8	85
Alternate format	69.2	56.4	38.5	20.5	17.9	—	—	20.5	—	—	43.6	—	—	12.8	39
Speech-to-text	71.9	59.4	40.6	21.9	6.3	—	—	15.6	—	—	56.3	—	—	15.6	32
Outlining software	82.6	65.2	30.4	17.4	4.3	—	—	13.0	—	—	21.7	—	—	8.7	23

Note. Diagnosis = specific diagnosis of learning disability/disorder; discrepancy = ability–achievement discrepancy; *DSM-IV* criteria = ≥1.5 *SD* discrepancy and achievement score ≤ 85 in reading (R), math (M), or written language (W); *DSM-5* criteria = achievement score ≤ 85 in reading (R), math (M), or written language (W), IQ >75, and symptom onset prior to age 18 years; fluency/processing deficit = fluency score ≤ 85 in reading (R), math (M), or written language (W) or any cognitive processing score ≤ 85; history = history of learning disability/special education/accommodations prior to college.

Table 3. Percentage of Students Meeting Objective Criteria for Instructional Accommodations.

	Criterion								
						Comorbid disorders			
Accommodation	History	Diagnosis	*DSM-IV* criteria	*DSM-5* criteria	Fluency deficit	ADHD	Communication	Any psychiatric	*n*
Access to professor's notes	70.3	61.5	23.1	45.1	18.7	16.5	9.9	31.9	91
Scribe/in-class note taker	64.6	56.3	16.7	45.8	14.6	27.1	8.3	41.9	48
Preferential seating	63.4	48.8	19.5	48.8	14.6	27.1	2.4	34.1	41
Record lectures	65.5	48.3	10.3	34.5	13.8	29.3	3.5	37.9	29
Preferential registration	33.3	20.2	—	—	—	0.0	6.7	20.0	15

Note. Any psychiatric = any diagnosed psychiatric disorder; communication = any diagnosed communication disorder; diagnosis = specific diagnosis of learning disability/disorder; *DSM-IV* criteria = ≥1.5 *SD* discrepancy and achievement score ≤ 85 in written language; *DSM-5* criteria = achievement score ≤ 85 in written language, IQ >75, and symptom onset prior to age 18 years; fluency deficit = achievement ≤ 85 in writing fluency or any cognitive processing deficit; history = history of learning disability/special education/accommodations prior to college.

recommend or the validity of their recommendations. The primary purpose of this study was to address these two questions.

Accommodations and Modifications

Nearly 90% of clinicians recommended that students receive additional time on exams. The majority of clinicians (54%) recommended 50% additional time, although 24% did not specify the amount of additional time students should receive. It is unclear how clinicians determine the appropriate amount of additional time students should receive. Some researchers have questioned the validity of lengthy time extensions, claiming that students with disabilities typically require less than 25% additional time to complete the same number of test items as typically

developing students working under normal time limits (Cahalan-Laitusis, King, Cline, & Bridgeman, 2006). Comparing the scores of students who receive extra time to the scores of typically developing students who work under normal time limits may place the latter group at a significant disadvantage (Miller, Lewandowski, & Antshel, 2013). Despite being logistically difficult to implement, 100%, unspecified, and unlimited additional time may threaten (rather than enhance) the validity of students' test scores (Lovett, 2010; Phillips, 1994). It is also noteworthy that the vast majority of clinicians who recommended additional time (84.5%) did not specify the type of exam for which additional time was required. Consequently, students may receive additional time on all exams, even exams that require skills for which students demonstrate average or above-average functioning.

As expected, other accommodations were commonly recommended: use of technology (69.4%), access to a reader (46%), special tutoring (24.8%), recorded books (17.8%), and a scribe (13.4%). Clinicians recommended testing in a separate room slightly more often in our study (26.2%) than in the NLTS-2 (19%; Newman et al., 2011). This difference may reflect characteristics of the two samples. Our study included students with learning disabilities exclusively, whereas the NLTS-2 sample included students with a wide range of disabling conditions. Many students with learning disabilities, especially those with limitations in reading, engage in read aloud and other metacognitive strategies that require a separate room during testing (Gersten, Fuchs, Williams, & Baker, 2001). Similarly, students with learning disabilities often show comorbid ADHD, which often merits a distraction-reduced test setting (Kane, Walker, & Schmidt, 2011). In contrast, other disabling conditions, such as hearing, orthopedic, speech, and visual impairment, may not require a separate test setting.

Our data also show that some of the "accommodations" recommended by clinicians are actually modifications to the manner in which these students participate in their educational programs and are evaluated by instructors. Accommodations remove construct-irrelevant variables that act as barriers to students' access to information and test performance (Lewandowski, Cohen, & Lovett, 2013). In contrast, modifications may introduce construct-irrelevant variables to learning experiences, making these experiences qualitatively different for students who do, and do not, receive them (Gregg, 2009a). For example, nearly 25% of clinicians recommended that students with disabilities be provided with their professors' lecture notes during the course of the semester. It is possible that students who have access to their professors' notes may have a qualitatively different learning experience than their classmates who are denied such access.

Modifications can also introduce construct-irrelevant variance during exams, threatening the validity of students' test scores (Phillips, 1994). More than 10% of clinicians recommended that their clients be administered different exams that their classmates. It is possible that alternative format exams assess different information and skills than exams administered in the standard format. For example, an exam that asks students to select answers from a word bank might require a different level of knowledge than an exam requiring students to fill in the blank. These differences threaten the validity of test scores, making evaluations of students' knowledge difficult and comparisons with other students in the class problematic. Similarly, more than 10% of clinicians recommended that students with disabilities receive grading modifications, such as the ability to retake tests or resubmit papers without penalty. Other clinicians recommended the use of different grading scales to evaluate the work of students with disabilities compared to their classmates. These grading modifications have high potential to render students' scores invalid and make comparisons across students in the same class impossible.

Although accommodations are both legally and ethically mandated for students with disabilities, many modifications are not. ADAAA (2008) requires "reasonable accommodations" for individuals with disabling conditions; however, it recognizes that modifications are inappropriate when they "fundamentally alter the nature of the goods, services, facilities, privileges, or advantages" offered by colleges or universities. Similarly, the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999) caution against modifications that threaten the validity of test scores as indicators of students' knowledge and skills. The purpose of test accommodations is to remove construct-irrelevant variance in the test setting, thereby yielding test scores with greater reliability and validity (Gregg, 2009b, 2012). To the extent that exam or grading modifications threaten the reliability or validity of these scores, they defeat that purpose.

Decision-Making Validity

The second goal of our study was to determine if clinicians' recommendations for accommodations were supported by information gathered during the assessment process. For each accommodation, we looked for four types of evidence: (a) a history of learning disabilities, (b) a current diagnosis, (c) test data, especially deficits in cognitive processing, and (d) functional impairment, especially deficits in academic skills.

Overall, we found that clinicians' recommendations for test accommodations showed varying degrees of objective support. The strongest support for test accommodations came from students' histories and current diagnoses. Between 57% and 83% of students whose clinicians recommended test accommodations had a history of learning

disabilities, special education, or previous accommodations. Similarly, between 54% and 84% of students whose clinicians recommended test accommodations were currently diagnosed with a learning disability or disorder. It is, perhaps, not surprising that the strongest evidence supporting clinicians' recommendations came from students' histories and current diagnoses. Disability specialists regard a previous or current "learning disability" label as the most important evidence that a student should be granted accommodations in college (Banerjee et al., 2014). Similarly, DOJ (2010) regulations call for the provision of accommodations to students who have been diagnosed with a disability in the past. Recent guidelines issued by the Association on Higher Education and Disability (AHEAD, 2012) go even further, asserting that accommodations should be provided to students who merely *report* a history of learning problems and accommodations.

Although most students had both a history of learning disabilities and a current learning disability diagnosis, many students did not. For example, nearly one third of students whose clinicians recommended additional time on exams had no history of learning disabilities and almost one fourth did not have a current disability diagnosis. Similarly, approximately one third of students whose clinicians recommended access to a calculator during math exams did not have a history of a math disability and almost one half of these students did not have a current math disability diagnosis.

Of course, a history of learning disabilities or a current diagnostic label is not sufficient evidence that a person has a current disability that merits accommodation (Lewandowski et al., 2009; Lovett et al., 2009). The individual must experience substantial limitations in academic skills or cognitive processing that interfere with learning, compared to most people in the general population. Overall, however, we found limited evidence that students experienced normative deficits in academic skills, academic fluency, or cognitive processing that might merit accommodations. Consistent with the findings of previous studies (Sparks & Lovett, 2009b, 2013), relatively few students showed a significant ability–achievement discrepancy or met *DSM-IV* criteria for a learning disorder. On average, approximately one half of students met *DSM-5* criteria, which require a normative deficit in academic skills. On average, fewer than one half of students showed deficits in cognitive fluency or processing.

Altogether, our findings indicate that clinicians often recommend accommodations to college students without evidence supporting their provision. Our findings also suggest that clinicians sometimes recommend accommodations indiscriminately; in some instances, their recommendations showed little correspondence to students' specific limitations or academic contexts. For example, most clinicians recommended additional time on all college exams, regardless of the student's specific area of disability. Only about one half of these students met *DSM-5* criteria for a learning disability in reading, math, *or* written language. Furthermore, fewer than one half of these students showed an academic fluency, processing speed, or cognitive processing deficit that would merit additional time.

We also found relatively weak support for the provision of instructional accommodations. The strongest support came from students' histories; between 63% and 70% of students whose clinicians recommended instructional accommodations had a history of learning disabilities. Fewer students (48%–62%) were currently diagnosed with a learning disability. Most of these students did not meet *DSM-IV* or *DSM-5* criteria for disorder of written expression, which might merit accommodations such as a scribe or permission to record lectures. Fewer than one fifth of these students displayed an academic fluency or cognitive processing deficit. Similarly, very few students were diagnosed with a psychiatric disorder, such as ADHD or a communication disorder, which might merit instructional accommodations. We also found very weak evidence supporting the provision of preferential registration, although relatively few clinicians recommended this accommodation.

Our findings are consistent with previous research showing that some clinicians are willing to diagnose learning disabilities and recommend accommodations in the absence of objective evidence (Gordon et al., 2002; Harrison et al., 2013). These clinicians have a genuine desire to advocate for their clients and find ways to help them achieve academically. However, many clinicians misunderstand laws that govern the provision of accommodations in college. They may believe that these laws are designed to improve students' academic performance or grades rather than to protect them from discrimination. Consequently, some clinicians may try to provide the greatest number of services or accommodations to students that will help them achieve the highest test scores possible. Consequently, reports include statements such as "This student *would greatly benefit from* additional time on exams" or "It is essential that this student be tested in a separate, distraction-free setting, *to make sure he achieves his highest potential*." Although advocacy has a place in clinical practice, it must be grounded in the scientific standards of empiricism and objectivity (Phillips, 1994).

Indeed, there are few incentives for professionals to deny accommodations to students who request them. All students, with and without disabilities, recognize the benefits of accommodations (Lewandowski, Lambert, Lovett, Panahon, & Sytsma, 2014). Struggling students may see a learning disability diagnosis as a way to explain their achievement problems and accommodations as opportunities to earn higher test scores. Clinicians, in turn, are motivated to alleviate students' academic struggles and help

them achieve their highest potentials. Disability specialists are equally motivated to help students by providing the services clinicians recommend. Indeed, the provision of accommodations and other academic supports justifies their position in higher education. Finally, colleges themselves may be willing to provide accommodations to the extent that they promote student satisfaction, retention, and graduation. Denying accommodations to students who seek them also risks legal action (Disability Rights California, 2012).

Despite these motivations, the indiscriminate provision of accommodations has limitations that deserve greater attention. At the philosophical level, providing accommodations to students who do not merit them, or for coursework for which students do not show impairment, has the potential to erode academic standards. Furthermore, academic modifications substantially alter the expectations placed on these students, the curricula in which they participate, and the manner in which they are evaluated. At a professional level, providing indiscriminate accommodations violates basic principles of educational and psychological testing, which call for the reliable and valid use of assessment data. Most important, at the personal level, providing indiscriminate accommodations utilizes limited resources that students with actual disabilities require and may place low-achieving students who do not receive accommodations at a disadvantage relative to their classmates who receive them.

In fact, emerging data suggest that all students, not only students with disabilities, benefit from certain accommodations, such as additional time on exams (Lai & Berkeley, 2012; Lewandowski, Lovett, & Rogers, 2008; Lindstrom, 2010). For example, Gregg and Nelson (2012) found a large improvement in the test scores of typically developing students when they were provided additional time compared to the standard time allotment. Furthermore, Lewandowski et al. (2013) found that typically developing students actually benefitted more from additional time on a reading comprehension test than students with learning disabilities. Low-achieving classmates who are unable to procure additional time, because of a lack of awareness, know-how, or financial resources, may be at a disadvantage in the classroom (Gregg et al., 2006; Vickers, 2010).

We know surprisingly little about the effectiveness of other learning disability accommodations (Gregg & Nelson, 2012; Lai & Berkeley, 2012). Several commonly recommended accommodations have no studies examining their validity in a college setting (Gregg, 2012). Accommodations that are carefully selected to match students' needs have the greatest potential to be helpful (Gregg, 2011; Lindstrom, 2007). However, indiscriminate accommodations may be unhelpful or potentially harmful (Harrison, 2014; Lovett, 2010). Recently, researchers examined the effects of testing in a separate room on college students' exam scores. Contrary to expectations, students who received this accommodation actually performed worse than their counterparts who were tested in a group setting (Lewandowski, Wood, & Lambert, 2014). Clearly, more research is needed on the effectiveness of these popular accommodations.

Limitations and Future Directions

The greatest threat to the internal validity of our study rests is the manner in which we operationalized the criteria for accommodations. We attempted to define each criterion liberally to give clinicians the benefit of the doubt regarding their accommodation decision making. We also relied on the definitions used in previous studies or the *DSM*. Of course, reasonable professionals can disagree about how to best operationalize these criteria for research purposes. Some individuals may claim that students' self-reports or professionals' impressions, rather than objective assessment data, should largely determine the provision of accommodations (AHEAD, 2012). However, we believe that scientific practice requires the integration of clients' reports, professional judgment, *and* objective data.

The greatest threat to our study's external validity rests in the characteristics of our sample, which consisted of students enrolled in an urban 2-year college. One strength of the sample is its representativeness. It is large in size, ethnically and socioeconomically diverse, and reflects the type of postsecondary institution most often selected by students with disabilities. However, students with learning disabilities who attend 4-year universities may be qualitatively different than their counterparts at 2-year colleges. For example, 4-year university students receiving accommodations for learning disabilities may be less likely to have histories of learning problems, less likely to meet diagnostic criteria for learning disabilities, and less likely to show academic impairment (Sparks & Lovett, 2013; Weis et al., 2011). If our study was replicated with students enrolled in 4-year colleges, it is possible that fewer students would show evidence supporting their accommodations. It is likely, therefore, that the current study overestimates the strength of the documentation used to support the provision of accommodations in college.

Our findings have implications for clinicians who evaluate college students with suspected learning disabilities. First, they remind clinicians that accommodations are designed to ensure students' access to higher education, not to guarantee their success after enrollment. Students with learning disabilities must show substantial limitations in academic skills that limit their ability to participate in coursework or take exams. Second, if clinicians discover that a student has a substantial limitation in academic skills, they should specify the conditions under which this limitation exists. A student with a mathematics fluency deficit might require additional time on math exams, but may not be entitled to additional time on all exams. When recommending accommodations, clinicians

should be mindful of both the student's limitations and the academic context (Gregg & Lindstrom, 2008; Lindstrom, 2007). Third, not all accommodations requested by clinicians or students must be granted. Modifications to bona fide educational experiences, aspects of the curriculum, or methods of assessment or grading may substantially alter the standards of the educational program or threaten, rather than enhance, the validity of students' test scores (Phillips, 1994). Clinicians must walk a fine line between their desire to advocate for their clients and their commitment to psychological science.

Our results also call into question the appropriateness of recent DOJ (2010) regulations that direct college disability specialists to accept the accommodation recommendations of clinicians at face value (Lovett, 2014). Previous research indicates that many well-intentioned clinicians do not understand the laws applicable to the provision of accommodations in college (Gordon et al., 2002; Harrison et al., 2013). The current study suggests that many clinicians recommend accommodations indiscriminately, without sufficient evidence from students' histories, diagnoses, test data, and functional impairments. Furthermore, some clinicians recommend modifications to students' methods of instruction and evaluation that can threaten the validity of test scores and the fairness with which they are evaluated relative to their peers. Clearly, additional research is necessary to investigate the ways in which the current guidelines threaten the scientific practice of accommodation decision making.

Finally, our findings speak to the importance of universal design in higher education (Burgstahler & Cory, 2008). We know little about the effectiveness of most accommodations for adults with learning disabilities. We know less about the validity of test scores generated by students who do and do not receive them. Given the paucity of information, and emerging evidence suggesting that all students benefit from some accommodations, it seems desirable to remove construct-irrelevant barriers for *all* students, not merely the students assigned a diagnostic label.

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Notes

1. Postsecondary institutions vary in the accommodations they provide to students (Raue & Lewis, 2011). Therefore, the accommodations that students actually receive will be idiosyncratic to each school's disability policies and resources. Consequently, we examined clinicians' recommendations for accommodations to examine the validity of accommodation decision making independent of students' postsecondary institutions.
2. In this study, "separate room" was categorized as a test accommodation for reading disabilities because some students with reading disabilities read passages aloud or engage in other overtly verbal metacognitive strategies to enhance their reading comprehension (Gersten, Fuchs, Williams, & Baker, 2001). A separate room is necessary for these students so they do not disrupt classmates during testing. A separate room may also be warranted for students with comorbid attention-deficit/hyperactivity disorder (ADHD). However, in our sample, only 18.1% of students whose clinicians recommended a separate room for testing had ADHD.

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