

# LEARNING DISABILITIES AND THE AMERICANS WITH DISABILITIES ACT: THE CONUNDRUM OF DYSLEXIA AND TIME

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## I. INTRODUCTION

While the Americans with Disabilities Act<sup>1</sup> and its regulations make clear that learning disabilities are covered,<sup>2</sup> neither defines learning disabilities. The lack of definition, combined with a general lack of public understanding of learning disabilities, leaves some legal academics wondering whether learning

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1. 42 U.S.C.A. §§ 12101–12213 (Westlaw 2009). Some general provisions and Titles I and V of the ADA were amended in 2008 by the ADA Amendments Act of 2008, Pub. L. 110-325, 122 Stat. 3553 (2008). See *infra* n. 26 (discussing the genesis of the 2008 amendments). Citations in this Article are to the revised statute, which took effect on January 1, 2009.

2. The ADA covers “mental impairments” as well as physical disabilities. 42 U.S.C.A. § 12102(1)(A) (Westlaw 2009). ADA regulations refer to “specific learning disabilities” as impairments that may need accommodation. See *e.g.* 28 C.F.R. § 35.104 (2008). For a discussion of impairments, see *infra* Part II(A). For articles on general accommodation of learning disabilities in law schools, see Susan Johanne Adams, *Leveling the Floor: Classroom Accommodations for Law Students with Disabilities*, 48 J. Leg. Educ. 273 (1998); Lisa Eichhorn, *Reasonable Accommodations and Awkward Compromises: Issues Concerning Learning Disabled Students and Professional Schools in the Law School Context*, 26 J.L. & Educ. 31 (1997); Tracey I. Levy, *Legal Obligations and Workplace Implications for Institutions of Higher Education Accommodating Learning Disabled Students*, 30 J.L. & Educ. 85 (2001); Suzanne E. Rowe, *Reasonable Accommodations for Unreasonable Requests: The Americans with Disabilities Act in Legal Writing Courses*, 12 Leg. Writing 3 (2006); M. Kay Runyan & Joseph F. Smith, Jr., *Identifying and Accommodating Learning Disabled Law School Students*, 41 J. Leg. Educ. 317 (1991).

disabilities exist to the extent claimed and whether the usual accommodations level the classroom playing field or tilt it in favor of the accommodated student. Of specific concern is the frequent accommodation of providing extra time to students with learning disabilities,<sup>3</sup> whether on exams or on writing assignments.<sup>4</sup>

This Article addresses that concern by exploring the historical and current scientific understanding of learning disabilities<sup>5</sup> and relating that understanding to the ADA in the law school context. The Article agrees with the standard accommodation of extra time on exams,<sup>6</sup> but argues that writing-intensive courses frequently require more creative accommodations. As law schools move to incorporate more skills courses in response to the Carnegie Report,<sup>7</sup> they need to consider both the implications of writing deadlines for students with learning disabilities and how accommodations for those students can affect the administration of such courses. Schools can use successful accommodation strategies from legal writing classes<sup>8</sup> as models for developing new skills courses that appropriately accommodate students with learning disabilities.

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3. Nicole Ofiesh et al., *Using Speeded Cognitive, Reading, and Academic Measures to Determine the Need for Extended Test Time among University Students with Learning Disabilities*, 23 *J. Psychoeducational Assessment* 35, 35 (2005) (stating that extended time for tests is “the most frequently requested and provided accommodation for postsecondary students with learning disabilities”).

4. Questions about time accommodations have been raised whenever I have made presentations about the ADA. *E.g.* Suzanne E. Rowe, Presentation, *Reasonable Accommodations for Unreasonable Requests: The ADA in LRW* (Seattle, Wash., July 2004). Other accommodations that may cause concern, especially in the legal writing curriculum, are addressed in an earlier article. *See* Rowe, *supra* n. 2, at 41–56 (identifying nine additional categories of accommodations other than requests for additional time). While learning disabilities produce challenges in reading and writing that are interrelated, the focus of this Article is reading.

5. For someone just entering the world of learning disabilities and dyslexia, as I am, the scientific literature can be initially overwhelming. A clear, accessible summary of history and recent developments is provided in the first few chapters of Sally Shaywitz, *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level* (First Vintage Bks. ed. 2005).

6. The Article distinguishes between the typical three- or four-hour exam and longer exams. *See infra* pt. V(A).

7. William M. Sullivan et al., *Educating Lawyers: Preparation for the Profession of Law* (Jossey-Bass 2007).

8. Schools use a variety of names for the required, first-year legal writing course. Although this Article uses the generic name “legal writing,” the course necessarily teaches legal analysis and organizational paradigms. Moreover, even when legal research is taught in a separate course, the legal writing course will require students to conduct independent research and use the results of that research as the authoritative basis for their analysis.

The Article begins in Part II with a brief discussion of the statutory requirements of the ADA, focusing on the sections that are implicated when a student requests time accommodations because of learning disabilities. In Part III, the Article turns to learning disabilities, examining the general characteristics of students with learning disabilities, the historical development of the scientific understanding of learning disabilities, and the current methods for studying learning disabilities and for testing students with such disabilities. The focus of this part is on dyslexia both because it accounts for approximately 80 percent of all learning disabilities<sup>9</sup> and because it is more likely to cause challenges to law students than are other learning disabilities.<sup>10</sup> Part IV reviews studies of learning disabled students and normally achieving students in timed testing situations. Part V assesses one of the most common accommodations for learning disabilities—extra time—on timed law school exams, in law school classes requiring independent papers, in legal writing classes, and in other skills courses.

The Article supports providing extra time on exams, while recognizing that further scientific advances and commitment of greater resources in administering exams will allow the ADA to be applied more accurately. In “paper classes,” students typically do not receive extra time because they have the entire semester in

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9. Am. Psychiatric Assn., *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR* 52 (4th ed., text rev., Am. Psychiatric Publ. 2000). Other studies suggest that up to 90 percent of students with learning disabilities have reading disabilities or dyslexia. Jennifer H. Lindstrom, *Determining Appropriate Accommodations for Postsecondary Students with Reading and Written Expression Disorders*, 22 *Learning Disabilities Research & Prac.* 229, 229 (2007); see also Roderick I. Nicolson & Angela J. Fawcett, *Dyslexia, Learning, and the Brain* 1 (MIT Press 2008) (calling dyslexia “the most prevalent of the developmental disorders”).

10. On the October 2003 Law School Admissions Test (LSAT), 42 percent of the accommodated testing requests were for applicants with learning disabilities; on the December 2003 test, 38 percent of the accommodated testing requests were for applicants with learning disabilities. Joan Van Tol, Panelist, *Can We Be Too Accommodating? Probing the Outer Limits of the ADA* (Am. Assn. L. Schs. Sec. on Leg. Research & Writing Annual Program, Jan. 4, 2004) (copy of PowerPoint slides on file with Author).

Other common learning disabilities include Disorder of Written Expression and Mathematics Disorder. See Am. Psychiatric Assn., *supra* n. 9, at 53–56. Written language disorder is evidenced by poor grammar, punctuation, and spelling; poor handwriting; and poor organization of paragraphs. All but the last symptom should be less of a concern now that almost all students use computers (with grammar and spelling check features) for typing class notes, papers, and exams. Math disorder could cause some problems in classes like taxation and accounting for lawyers.

which to produce a single paper.<sup>11</sup> For those classes, the Article suggests techniques that may assist learning disabled students (and, in fact, all students) in producing work of a high quality. As for legal writing classes, the Article concludes that practical circumstances and pedagogical goals often limit the provision of extra time, but proposes as an alternative solution light-loading during the first semester of law school. This alternative may also be useful for schools designing new skills courses. In sum, understanding the science of learning disabilities should convince faculty, administrators, students with learning disabilities, and their classmates<sup>12</sup> that learning disabilities do exist, but careful thought is required to determine when extra time is a fair accommodation.

## II. REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT

The ADA prohibits public and private law schools from discriminating against any qualified, disabled individual on the basis of that disability.<sup>13</sup> Specifically, Title II of the ADA<sup>14</sup> prohibits discrimination by “public entities” in their provision of services,

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11. An informal survey of representative schools indicates that few students request more time as an accommodation in a class that requires one paper be written throughout the course of the semester. (Results on file with the Author.) I am especially grateful for the insights of Tracy McGaugh, Nancy Soonpaa, and Cliff Zimmerman.

12. See Lindstrom, *supra* n. 9, at 230 (noting impact of faculty attitude and pedagogy on success of students with learning disabilities, in addition to the effects of the personal characteristics of the students themselves).

Anecdotes abound about the stigma that students with learning disabilities receive. In one instance, classmates of a law school’s valedictorian refused to applaud her at graduation because they perceived her as having received her top grades through an unfair advantage. Suzanne E. Rowe, Presentation, *The Science behind the ADA* (Indianapolis, Ind., July 15, 2008) (comment of audience participant).

Schools and individual teachers can do much to combat the lack of knowledge that leads to such unfortunate situations while at the same time assisting undiagnosed students with learning disabilities in understanding their condition. In an orientation session or as part of an early class, administrators or faculty could explain the most common characteristics of persons with learning disabilities, provide examples from this Article to demonstrate the challenges faced by learning disabled students, explain the types of accommodations that may be available, and note the office on campus a student should contact for testing and accommodation if he suspected himself of having learning disabilities. This approach provides students with information about learning disabilities and steps to take for diagnosis, which is consistent with the ADA standard for placing the burden of self-identification on students, and shows classmates why accommodations should not be perceived as advantages.

13. *E.g.* 42 U.S.C.A. § 12182(a).

14. Title II is codified at 42 U.S.C.A. §§ 12131–12165.

programs, and activities.<sup>15</sup> Title II defines public entities to include state and local governments as well as their departments, agencies, and other instrumentalities,<sup>16</sup> which includes state universities and law schools.<sup>17</sup> Title III of the ADA<sup>18</sup> prohibits discrimination by private entities that operate “places of public accommodation,”<sup>19</sup> defining places of public accommodation to include postgraduate private schools and other places of education.<sup>20</sup> Thus, all law schools are covered. The ADA works in tandem with the Rehabilitation Act of 1973 (also known as “Section 504”),<sup>21</sup> which similarly prohibits discrimination by entities receiving federal funding—including law schools and their parent universities<sup>22</sup>—against an otherwise qualified individual solely on the basis of the individual’s disability.<sup>23</sup>

In the law school context, as in other postsecondary situations, the student must first claim ADA protection and request accommodation. The school must then respond by assessing the request and providing appropriate accommodations. An overview of this process follows.

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15. 42 U.S.C.A. § 12132.

16. *Id.* at § 12131(1).

17. *Zukle v. Regents of U. of Cal.*, 166 F.3d 1041, 1045 (9th Cir. 1999) (“Title II prohibits discrimination by state and local agencies, which includes publicly funded institutions of higher education.”); *see also Wong v. Regents of U. of Cal.*, 192 F.3d 807, 811 (9th Cir. 1999); *U. of Wash.*, 15 Natl. Disability L. Rep. (LRP) ¶ 125 (U.S. Off. Civ. Rights Nov. 30, 1998) (applying Title II to disabled student’s complaint against public law school’s tuition fee structure).

18. Title III is codified at 42 U.S.C.A. §§ 12181–12189.

19. 42 U.S.C.A. § 12182(a).

20. 42 U.S.C.A. § 12181(7)(J) (Westlaw 2009).

21. 29 U.S.C.A. § 701(b)(1) (Westlaw 2009).

22. *See Bonnie Poitras Tucker & Joseph F. Smith, Jr., Accommodating Law Faculty with Disabilities*, 46 J. Leg. Educ. 157, 158 (1996) (explaining that a school is covered by the Rehabilitation Act regardless of whether the federal financial support award is made specifically to the law school or to its parent university).

23. 29 U.S.C.A. § 794(a) (Westlaw 2009). For a discussion of the interrelationship of the ADA and the Rehabilitation Act, *see Rowe, supra* n. 2, at 8–10. *See also Stern v. U. of Osteopathic Med. & Health Sci.*, 220 F.3d 906, 908 (8th Cir. 2000) (explaining that ADA and Rehabilitation Act cases are interchangeable); *Dubois v. Alderson-Broadbudds College, Inc.*, 950 F. Supp. 754, 757 (N.D.W. Va. 1997) (explaining that Rehabilitation Act cases have been considered precedential for many ADA decisions); 122 Stat. at 3554 (rejecting a United States Supreme Court case interpreting the ADA in favor of an earlier Supreme Court case under the Rehabilitation Act).

### A. Student Action: The Student Must Be a Qualified Individual

To receive the protection of the ADA (and the Rehabilitation Act), a law student must assert that he is one of the qualified individuals Congress intended to protect.<sup>24</sup> The law student must prove the assertion through documentation that is recent, relevant, and trustworthy.<sup>25</sup> The ADA defines a covered individual as

an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, . . . or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity.<sup>26</sup>

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24. See Rowe, *supra* n. 2, at 10–11 (explaining that a student who does not inform the school of a disability has no claim against the school for failure to provide accommodation); see also *Zukle*, 166 F.3d at 1047 (examining burdens of proof in case involving medical student with learning disabilities); *Marlon v. W. New Eng. College*, 27 Natl. Disability L. Rep. (LRP) ¶ 70 n. 18 (D. Mass. Dec. 9, 2003) (noting school did not have notice of disability); *Leacock v. Temple U. Sch. of Med.*, 14 Natl. Disability L. Rep. (LRP) ¶ 30 (E.D. Pa. Nov. 25, 1998) (holding that a student failed to state a claim because medical school did not know of her disability before termination); *St. Thomas U.*, 13 Natl. Disability L. Rep. (LRP) ¶ 259 (U.S. Off. Civ. Rights Apr. 2, 1998) (stating that post-secondary school students have to notify their school of the disability and request accommodations). Contrast the requirement for self-identification in post-secondary schools with the requirement in elementary and secondary schools, in which the school must identify students with disabilities. See Council for Exceptional Children, *Understanding the Differences between IDEA & Section 504*, <http://www.ldonline.org/article/6086> (accessed Feb. 26, 2009) (stating that only IDEA requires school districts to identify and evaluate students suspected of having disabilities).

25. Rowe, *supra* n. 2, at 13–15. Documentation is typically considered *recent* if the testing was done within three years, although that is not a rigid rule. *Id.* at 13. Documentation is *relevant* if it specifically addresses the disability the student is asserting. *Id.* at 13–14. Documentation is *trustworthy* if it was prepared by a qualified evaluator. *Id.* at 14–15. The school should review the documentation, as noted in Part II(B), “to determine whether the individual’s diagnostician has adequately documented his or her diagnosis and whether the documentation demonstrates a need for accommodations.” Lindstrom, *supra* n. 9, at 230.

The views and training of the evaluator can have a major impact on whether a disability is diagnosed and the accommodations recommended. See Michael Gordon et al., *ADA-Based Accommodations in Higher Education: A Survey of Clinicians about Documentation Requirements and Diagnostic Standards*, 35 *J. Learning Disabilities* 357, 358, 359–362 (2002) (examining the training and understanding of the ADA by clinicians who “considered themselves to be experts” in diagnosing learning disabilities). A school is not required to accept the student’s documentation but may have a separate evaluator review the case. Rowe, *supra* n. 2, at 15.

26. 42 U.S.C.A. § 12131(2). Note that the ADA Amendments Act of 2008 modified the

Not all disabilities give rise to ADA protection.<sup>27</sup> A disability under the ADA is defined as “a *physical or mental impairment that substantially limits one or more major life activities* of such individual.”<sup>28</sup> The statute includes as impairments “specific learning disabilities,” though as noted earlier the term is not defined.<sup>29</sup> “Major life activities” include “caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, *learning, reading, concentrating, thinking, communicating*, and working.”<sup>30</sup> An im-

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definition in 42 U.S.C.A. § 12111(8) from “qualified individual with a disability” to “qualified individual.” See 122 Stat. at 3557.

27. This point gave rise to considerable media coverage and legislative action in 2008. News stories focused on individuals who were dismissed from employment because of their disabilities but not allowed to sue under the ADA because their disabilities were not recognized by that Act. See Joseph Shapiro, *Revamped Disabilities Rights Bill on Fast Track*, <http://www.npr.org/templates/story/story.php?storyID=91625706> (accessed Mar. 1, 2009). One of the best known cases was *McClure v. General Motors Corp.*, 2003 U.S. Dist. LEXIS 402 (N.D. Tex. Jan. 13, 2003). The ADA Amendments Act of 2008 was introduced in Congress to address these concerns; it was signed into law by President George W. Bush on September 25, 2008, and its changes became effective January 1, 2009. See 122 Stat. 3553.

28. 42 U.S.C.A. § 12102(1) (emphasis added) (also including a person with “a record of such an impairment” or “regarded as having such an impairment”); accord 29 U.S.C.A. § 705(9)(B) (Westlaw 2009) (defining the term “disability” under the Rehabilitation Act); see also 34 C.F.R. § 104.3(j)(1) (2008) (Rehabilitation Act regulations); *Guckenberger v. Boston U.*, 974 F. Supp. 106, 134 (D. Mass. 1997) (dealing with requirements under both the ADA and the Rehabilitation Act).

29. For Title II, see 28 C.F.R. § 35.104. See also 29 C.F.R. § 1630.2(h) (2008) (providing the same definition for the equal employment provisions of the ADA). Regulations under the Rehabilitation Act also include “specific learning disabilities” as physical or mental impairments. 34 C.F.R. § 104.3(j)(2)(i)(B); see also *DePaul U.*, 4 Natl. Disability L. Rep. (LRP) ¶ 157 (U.S. Off. Civ. Rights May 18, 1993) (concluding that a student’s specific visual learning disabilities constituted a physical or mental impairment under Rehabilitation Act regulations).

30. 42 U.S.C.A. § 12102(2)(A) (emphasis added). Prior to the 2008 Amendments, ADA regulations defined “major life activities” to include, *inter alia*, breathing, walking, seeing, hearing, speaking, and learning. 28 C.F.R. § 35.104; 29 C.F.R. § 1630.2(i). Rehabilitation Act regulations also include learning as a major life activity. 34 C.F.R. § 104.3(j)(2)(ii); see also *Villanova U.*, 16 Natl. Disability L. Rep. (LRP) ¶ 170 (U.S. Off. Civ. Rights Feb. 12, 1999) (concluding that law student’s disability that substantially limited her ability to learn satisfied Rehabilitation Act regulations’ definition of disability). Court decisions prior to 2008 found reading and working to be major life activities. *Bartlett v. N.Y. St. Bd. of L. Examrs.*, 226 F.3d 69, 80 (2d Cir. 2000); see also *Bartlett v. N.Y. St. Bd. of L. Examrs.*, 156 F.3d 321, 328 n. 3 (2d Cir. 1998) (reading), *vacated on other grounds*, 527 U.S. 1031 (1999); *EEOC v. R.J. Gallagher Co.*, 181 F.3d 645, 654–655 (5th Cir. 1999) (working). These activities are now clearly included in the post-2008 statutory definition. Relevant to the discussion *infra* at Part III(E), the Second Circuit declined to decide whether test taking and studying are major life activities. *Bartlett*, 226 F.3d at 80; see also *Baer v. Natl. Bd. of Med. Examrs.*, 392 F. Supp. 2d 42, 48 n. 2 (D. Mass. 2005) (questioning whether taking a timed test is a major life activity).

pairment “substantially limits” a major life activity by preventing or significantly restricting an individual’s ability to perform the activity.<sup>31</sup> This very specific, three-part definition of disability was interpreted by courts to restrict ADA coverage to a subset of persons generally considered to have disabilities, a situation the 2008 ADA Amendments sought to rectify by broadening coverage.<sup>32</sup>

### B. School Response: The School Is Not Required to Fundamentally Alter the Course of Study or Take on Undue Burdens in Providing Accommodations

The school must determine each student’s assertion of disability and requested accommodations on a case-by-case basis.<sup>33</sup> The school must respond to a documented assertion of a covered disability by determining whether the student has requested reasonable accommodations.<sup>34</sup> Most law schools and universities have established processes for making this determination.<sup>35</sup> In

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31. 29 C.F.R. § 1630.2(j) (employment). Diagnosis of an impairment alone is insufficient; the ADA also examines the effect an impairment has on a specific individual’s ability to perform a major life activity. *Id.*; see also Rowe, *supra* n. 2, at 12 (explaining pre-2008 that a law student who self-accommodates for dyslexia to the point of being unimpaired in the major life activity of learning is not covered by the ADA despite having a diagnosed learning disability); but see 122 Stat. at 3555–3557 (continuing to use the “substantially limits” language but rejecting the narrow application of the term in Supreme Court cases *Toyota Motor Manufacturing, Inc. v. Williams*, 534 U.S. 184 (2002) (carpal tunnel syndrome in assembly line workers), and *Sutton v. United Air Lines, Inc.*, 527 U.S. 471 (1999) (visually impaired airplane pilots)).

32. See *supra* n. 27 (explaining the news stories and cases that generated support for the ADA Amendments Act of 2008).

33. *Wong*, 192 F.3d at 818 (“Because the issue of reasonableness depends on the individual circumstances of each case, this determination requires a fact-specific, individualized analysis of the disabled individual’s circumstances and the accommodations that might allow him to meet the program’s standards.”); *Childress v. Clement*, 5 F. Supp. 384, 391 (E.D. Va. 1998) (stating that the ADA requires a case-by-case determination by an educational institution to determine whether a student is otherwise qualified despite the disability); see e.g. 29 C.F.R. § 1630.2(j); see also Nicole S. Ofiesh et al., *Extended Test Time and Postsecondary Students with Learning Disabilities: A Model for Decision Making*, 19 Learning Disabilities Research & Prac. 57, 57 (2004) (proposing a model for university disability service providers to follow in addressing accommodation requests regarding extended time).

34. This Article uses the more common term “reasonable accommodation,” although it is actually from Title I of the ADA on employment. Title II uses the term “reasonable modification.” In deciding ADA cases, courts tend to use the terms interchangeably. See e.g. *Wong*, 192 F.3d at 816 n. 26 (“We will continue the practice of using [‘reasonable accommodation’ and ‘reasonable modification’] interchangeably.”).

35. Many schools have offices dedicated to disability issues. See e.g. U. of Louisville

deciding whether to accommodate the student as requested, the school is not required to *fundamentally alter* the course of study or to assume *undue financial or administrative burdens*.<sup>36</sup> Examples of requested accommodations that would have fundamentally altered the course of study in a law school include requiring a professor to break complex exam questions into outline format and allowing a student to outline answers instead of writing essays.<sup>37</sup>

In determining whether a requested accommodation would create an undue financial burden, courts balance the cost of the accommodation against the financial resources of the school.<sup>38</sup> Undue administrative burdens could result from requests for professors to meet daily with a disabled student to keep him on track or to edit the student's paper.<sup>39</sup> Technological advances must be considered in determining the burden that might be imposed.<sup>40</sup> For example, just a few years ago, a school could have argued that a student's request to turn in papers other than during the business day was unreasonable because it would have required someone to be at the school twenty-four hours per day. With electronic filing of documents becoming routine, that argument would no longer be persuasive, and the accommodation would likely be seen as reasonable.

### III. LEARNING DISABILITIES

This Part turns to learning disabilities that may entitle a student to accommodation under the ADA.<sup>41</sup> This Part begins by

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Disability Resource Ctr., <http://louisville.edu/disability> (accessed Mar. 1, 2009); U. of Oregon Disability Servs., <http://ds.uoregon.edu> (accessed Mar. 1, 2009); *see also* Ofiesh et al., *supra* n. 33, at 58 (noting that postsecondary schools will have appointed individuals such as an "ADA coordinator or disability service provider" to respond to student requests for accommodation).

36. *See* Rowe, *supra* n. 2, at 15–20 (explaining concepts of fundamental alteration and undue burdens).

37. *Villanova U.*, 16 Natl. Disability L. Rep. ¶ 170 (concerning law student with learning disabilities); *see also S.E. Community College v. Davis*, 442 U.S. 397 (1979) (holding that nursing school did not have to admit hearing-impaired applicant who would not have been able to participate in clinical portion of the program).

38. 42 U.S.C.A. § 12111(10) (defining undue hardship). *See* 28 C.F.R. § 36.104 for a complete list of factors.

39. *See* Rowe, *supra* n. 2, at 19–20 (arguing that even weekly meetings with a single student could be an unreasonable burden).

40. *See Davis*, 442 U.S. at 412–413 (noting that technological advances could make programs accessible to students with disabilities without fundamentally altering the program or imposing undue burdens).

41. That learning disabilities give rise to accommodations scenarios is clearer since

explaining general characteristics of learning disabled individuals. Then it traces the development of scientific understanding of learning disabilities, including the work of the Connecticut Longitudinal Study and advances in brain imaging. This Part ends by explaining the methods used to determine whether a person has learning disabilities.

At the outset, it is important to realize that a number of different learning disabilities exist, although laypersons often lump them together. Learning disabilities as defined by the *Diagnostic and Statistical Manual of Mental Disorders* include Reading Disorder (also called dyslexia), Mathematics Disorder, and Disorder of Written Expression.<sup>42</sup> Attention Deficit Hyperactivity Disorder (ADHD, also called Attention Deficit Disorder or ADD) is not technically a learning disorder,<sup>43</sup> but it frequently coexists in students with learning disorders.<sup>44</sup> Many studies on learning disabled students also group together students who have a variety of learning disabilities.<sup>45</sup>

The most common learning disability is reading disability, also known as dyslexia.<sup>46</sup> It has been estimated to account for 80 percent of all learning disabilities<sup>47</sup> and is the particular focus of this Article because reading is so fundamental to law study. Extrapolating from the number of school children and college stu-

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the 2008 Amendments included “learning” as a major life activity. See 122 Stat. at 3555.

42. Am. Psychiatric Assn., *supra* n. 9, at 49, 52.

43. The DSM-IV-TR does not classify ADHD as a learning disorder. See *id.* at 50 (noting that “[m]any individuals (10 percent–25 percent)” with ADHD also have learning disorders); see also Larry B. Silver, *What Is ADHD? Is It a Type of LD?* <http://www.ldonline.org/article/5800> (accessed Feb. 25, 2009) (providing a brief, accessible overview of the causes, symptoms, and treatment of ADHD).

44. Margaret J. Snowling, *Dyslexia* 209–212 (2d ed., Blackwell Publishers 2000) (discussing co-morbidity between dyslexia and ADHD). While ADHD is related to learning disabilities and is covered by the ADA, see *Axelrod v. Phillips Academy*, 36 F. Supp. 2d 46, 50–51 (D. Mass. 1999), it is beyond the scope of this Article. For a discussion of ADHD and the Americans with Disabilities Act in the law school context, see Robin A. Boyle, *Law Students with Attention Deficit Disorder: How to Reach Them, How to Teach Them*, 39 John Marshall L. Rev. 349 (2006).

45. E.g. Sally M. Reis et al., *Compensation Strategies Used by High-Ability Students with Learning Disabilities Who Succeed in College*, 44 Gifted Child Q. 123, 127 (2000) (listing the following characteristics to describe the nature of disabilities experienced by the twelve students being studied: reading disability, slow processing of information, spelling, handwriting, poor short-term memory, decoding, dyslexia, language problems, abstract math problems, social problems, motor skills, verbal and written expression, auditory problems, attention deficit disorder, and penmanship).

46. Am. Psychiatric Assn., *supra* n. 9, at 52.

47. *Id.*

dents receiving disability services,<sup>48</sup> law faculty and administrators are likely to encounter increasing numbers of dyslexic students in the future, many of whom will be covered by the ADA.

Definitions of dyslexia are plentiful<sup>49</sup> but not always helpful, especially to the layperson.<sup>50</sup> Moreover, definitions of dyslexia have evolved over time, and the scientific underpinnings are still the subject of debate.<sup>51</sup> The focal points are (1) a discrepancy between aptitude and achievement, and (2) a neurological basis. Most definitions have addressed an unexpected discrepancy between intelligence and reading ability.<sup>52</sup> Students with high IQ scores but low reading ability are known to have average or above-average intelligence, but a discrepancy exists between the students' aptitude and achievement levels.<sup>53</sup> Thus, the disability

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48. See Shaywitz, *supra* n. 5, at 29 (discussing studies suggesting that 3.5 percent of school children—more than two million—receive special education for reading disabilities); Bill Schackner, "Invisible" Disability Now Visible on Campus, Pitt. Post-Gazette (Sept. 5, 2004) (available at <http://www.post-gazette.com/pg/04249/373149.stm>) (noting that 4 percent of college students have a learning disability and that the segment of students with learning disabilities is growing faster than any other sector of disabled college students).

49. See Nicolson & Fawcett, *supra* n. 9, at 11 (listing various definitions from 1968 to 2002); see also G. Reid Lyon et al., *Defining Dyslexia, Comorbidity, Teachers' Knowledge of Language and Reading: A Definition of Dyslexia*, 53 *Annals of Dyslexia* 1, 2–9 (2003) (providing a line-by-line analysis of the prevailing definition in 2003); Michael Rutter & William Yule, *The Concept of Specific Reading Retardation*, 16 *J. Child Psychol. & Psych.* 181 (1975) (exploring "the continuing controversy about the existence of dyslexia" and the terminology used in the mid-1970s).

50. See Nicolson & Fawcett, *supra* n. 9, at 11–12 (noting that published definitions are the result of compromise and analyzing the development of various definitions). Laypersons are especially likely to find the scientific jargon unclear. See *id.*

51. *Id.* at 12; see also Guinevere F. Eden & Thomas A. Zeffiro, *Neural Systems Affected in Developmental Dyslexia Revealed by Functional Neuroimaging*, 21 *Neuron* 279, 279–282 (1998) (comparing behavioral and neuroimaging evidence supporting both the phonological processing theory and the visual processing theory); Albert M. Galaburda, *Neuroanatomical Basis of Developmental Dyslexia*, 11 *Neurologic Clinics* 161, 161 (1993) (noting the possibility of more than one cause for dyslexia, but supporting the phonologically based, linguistic defect theory over the visual defect theory).

52. See Nicolson & Fawcett, *supra* n. 9, at 11 (listing several definitions between 1968 and 2002); see also Snowling, *supra* n. 44, at 15 (quoting the following 1968 definition of dyslexia provided by the World Federation of Neurology: "[A] disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin.").

53. Shaywitz, *supra* n. 5, at 20 (discussing dyslexic students). Much of the literature discussed in this Article assumes that learning disabilities are based on a specific discrepancy between aptitude and achievement. See e.g. Reis et al., *supra* n. 45, at 131–132; Linstorm, *supra* n. 9, at 229. The DSM-IV-TR, however, does not require this discrepancy. See Am. Psychiatric Assn., *supra* n. 9, at 49–53 (listing among criteria for dyslexia standardized test scores "substantially below that expected given the person's chronological age, measured intelligence, and age-appropriate education" (emphasis added)). The crite-

in reading is unexpected in these students because of their high cognitive skills in other areas.<sup>54</sup> Some researchers refer to these students as having isolated difficulties in a “sea of strengths.”<sup>55</sup> Under the discrepancy definition, the overall intelligence of dyslexic students stands them in contrast with low-achieving students of below-average intelligence, who simply lack the ability to learn.<sup>56</sup>

Another component of most definitions explains the cognitive impairment of dyslexia as a phonological deficit.<sup>57</sup> One definition states dyslexia is “neurological in origin,” and is “characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities [that] . . . result from a deficit in the phonological component of language.”<sup>58</sup> Phonemes are the most basic components of speech, so according to this definition the person with dyslexia has difficulties at the most basic level of reading—rapid word identification. Researchers disagree about the causes of the phonological deficit, but the predominant view is that faulty brain circuitry impedes the fundamental decoding of words.<sup>59</sup> The phonological deficit definition will be explored in more detail in Part III(C).

#### A. General Characteristics of Learning Disabilities and Dyslexia

While each student with learning disabilities will exhibit her strengths and weaknesses uniquely, some general characteristics provide useful benchmarks for understanding what learning dis-

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ria of the DSM-IV-TR look for “underachievement in one or more academic areas that is explained by a processing deficit.” Ofiesh et al., *supra* n. 33, at 60. The difference highlights the lack of a specific definition for learning disabilities in adults; even so, researchers agree that the primary concern for adults with learning disabilities is “a cognitive processing or neuropsychological deficit that has a significant impact on learning or work.” *Id.*

54. Shaywitz, *supra* n. 5, at 20 (noting that the “central concept that underlies developmental dyslexia [is] an *unexpected* difficulty in learning to read”) (emphasis in original).

55. *See id.* at 57 (observing that a “circumscribed, encapsulated weakness” such as that found in dyslexia “is often surrounded by a sea of strengths”).

56. *See id.* at 20.

57. Nicolson & Fawcett, *supra* n. 9, at 11.

58. *Id.* (quoting the 2002 definition of the International Dyslexia Association).

59. For a critique of the competing visual stimuli theory, see Snowling, *supra* n. 44, at 158–176. For a critique of the phonological deficit theory, see Hollis S. Scarborough, *Developmental Relationships between Language and Reading: Reconciling a Beautiful Hypothesis with Some Ugly Facts*, in *The Connections between Language and Reading Disabilities* 3 (Hugh W. Catts & Alan G. Kamhi eds., Lawrence Erlbaum Assocs. 2005) [hereinafter *Language and Reading Connections*].

abilities are. Students with learning disabilities may have difficulties acquiring reading skills, reading effectively, writing, reasoning, or performing mathematical functions, depending on the particular disability.<sup>60</sup> General indicators of dyslexia—a type of learning disability—include problems reading aloud, learning new words, using words in context, reading comprehension, taking effective notes, organizing thoughts, spelling, and editing text.<sup>61</sup>

Children with dyslexia have difficulty learning to read; they tend to read more slowly, and they process what they have read more slowly.<sup>62</sup> These children may also have verbal problems. They may begin speaking later than their peers and then experience difficulty with pronunciation.<sup>63</sup> As they get older, dyslexic children may face challenges in finding the right words to express their ideas and may try to cover those challenges by using general or vague language (e.g., “stuff” or “things”).<sup>64</sup> Clearly, students who have been admitted to law school can read with some level of facility and speak with clarity, but they share in common some important characteristics, some of which harken back to childhood struggles. The law students with dyslexia likely read at a much slower pace than classmates, may take longer to comprehend what they read, and may have problems with writing exams and papers.<sup>65</sup>

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60. Eichhorn, *supra* n. 2, at 34–35.

61. Noel Gregg et al., *Timed Essay Writing: Implications for High-Stakes Tests*, 40 *J. Learning Disabilities* 306, 307 (2007). A related issue is meeting deadlines; given the challenges the dyslexic student faces, timing issues are not surprising. *Id.*

62. See Shaywitz, *supra* n. 5, at 36–40 (using case studies of two patients to illustrate common childhood symptoms of dyslexia).

63. *Id.* at 94. These children may have difficulty with the sounds that comprise words, meaning that childhood rhymes elude them. *Id.* at 95. The phonological reasons for this difficulty are discussed *infra* in Part III(C).

64. *Id.* at 96. Some “common knowledge” about dyslexia has been shown to be simply myth. Dyslexia is more than switching the order of letters, but it is not necessarily connected to being left-handed or to left-right orientation difficulties. *Id.* at 100–101.

65. See *id.* at 38–39 (discussing Gregory, a medical student who struggled with new terminology and memorization but had no difficulty with conceptual work). Regarding writing, one group of researchers noted,

Writers with dyslexia often demonstrate problems with semantics (word usage in context), grammar (e.g., agreement), and mechanics (e.g., application of punctuation and capitalization rules) that have direct and negative effects on written syntax. Furthermore, [some dyslexic writers] may make sentence-level monitoring errors (e.g., leaving out words) when faced with the taxing demands of planning and composing an entire essay.

Set against these challenges with written language, people with learning disabilities display remarkable skills that contribute to their success: resilience, determination, resourcefulness, creativity, original thinking, self-confidence, and strong oral communication skills.<sup>66</sup> These abilities show that, despite fundamental problems with written language, students with dyslexia can think at very high levels.<sup>67</sup>

Successful dyslexics often have turned their challenges into advantages. Given that reading large amounts of writing is difficult, many successful dyslexics have developed an uncanny ability to zero in on the key passages in lengthy documents and identify the critical information.<sup>68</sup> As another example, because rote memorization is often extremely difficult for dyslexics, they might compensate by learning concepts on a deeper level, which make sense to them and can be remembered.<sup>69</sup> A disproportionate number of artists and scientists—working in fields that reward creativity—seem to have dyslexia,<sup>70</sup> and some credit the disability with their success.<sup>71</sup>

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Gregg et al., *supra* n. 61, at 307; *but see infra* nn. 116–117 and accompanying text.

66. Lindstrom, *supra* n. 9, at 230; Reis et al., *supra* n. 45, at 124; *see also* William Wissemann, *Accomplishing Big Things in Small Pieces* (Sept. 14, 2008) (essay on National Public Radio's Weekend Edition Sunday, as part of the "This I Believe" series) (available at <http://www.npr.org/templates/story/story.php?storyId=94566019>). Examples of successful professionals with dyslexia abound. *E.g.* Shaywitz, *supra* n. 5, at 345–366 (discussing the struggles and successes of author John Irving, playwright Wendy Wasserstein, novelist and television writer Stephen J. Cannell, financial guru Charles Schwab, surgeon Graeme Hammond, and others), 117 (listing other highly intelligent people with dyslexia); Betsy Morris, *Overcoming Dyslexia*, 145 *Fortune* 54 (May 13, 2002) (discussing the challenges and advantages dyslexia provided for attorney David Boies and others); Paul Orfaea & Ann Marsh, *Copy This! How I Turned Dyslexia, ADHD, and 100 Square Feet into a Company Called Kinko's* (Workman Publ. Co. 2007); Reis et al., *supra* n. 45, at 124 (discussing studies of high-ability students with learning disabilities and listing common characteristics); Rob Turner, *In Learning Hurdles, Lessons for Success*, 153 *N.Y. Times* 10 (Nov. 23, 2003) (publishing an interview with Charles Schwab).

67. Students with learning disabilities can develop highly successful strategies to help them succeed. *See generally* Reis et al., *supra* n. 45 (studying the habits of twelve successful university students with learning disabilities). Among these compensation strategies are time management skills, improved note-taking, test-taking preparation, library skills, use of mnemonics and flashcards to aid memory, and "chunking" large quantities of information into small units to aid in mastery. *Id.* at 128–131.

68. *See* Shaywitz, *supra* n. 5, at 340; *see also id.* at 117 (listing other highly intelligent people with dyslexia). A law professor uses the following filtering device: she looks for the phrase "The court says . . ." in long judicial opinions. *Id.* at 118.

69. *Id.* at 57–58 (noting that the challenge with a basic skill can be turned into a source of greater comprehension).

70. Nicolson & Fawcett, *supra* n. 9, at 1; *see also* Shaywitz, *supra* n. 5, at 53 (theoriz-

## B. Historical Development of Scientific Understanding of Learning Disabilities

Knowing the long history of dyslexia helps modern-day teachers, administrators, and students understand that brain circuitry can cause bright individuals to have difficulty with reading. Historically, dyslexia was called “word blindness” because the patient seemed to have adequately functioning eyes but was unable to read words because of some injury to the brain.<sup>72</sup> The scientific literature includes references to symptoms of reading disability as early as 1676, the year a German physician wrote about a man who lost his ability to read after suffering a stroke.<sup>73</sup> In 1872, a British neurologist wrote of another man who lost both his ability to read and his ability to name familiar objects.<sup>74</sup> The condition came to be called “acquired alexia” because the patient had lost his prior ability to read following some trauma to the head.<sup>75</sup> Later the term “dyslexia” was coined as a subset of word blindness for patients who lost some, but not all, of their reading ability following brain lesions.<sup>76</sup>

Thus, even in the late 1800s, doctors recognized that injuries to the brain affected the ability to read. At the close of the nineteenth century, some were also wondering whether a congenital form of word blindness could limit a person’s ability to learn to read.<sup>77</sup> In 1896, an English physician first recognized what is now known as “developmental dyslexia” when he described a fourteen-year-old boy who was unable to read or to write his own name, despite adequate intelligence and high ability in other areas of learning.<sup>78</sup> By 1909, an American physician had docu-

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ing that dyslexics are creative because they must “think outside the box” in order to learn skills that come naturally to others).

71. *E.g.* Orfalea & Marsh, *supra* n. 66.

72. Shaywitz, *supra* n. 5, at 14. The term “word blindness” is credited to Scottish eye surgeon James Hinshelwood, who worked in the early years of the twentieth century. Nicolson & Fawcett, *supra* n. 9, at 2.

73. Shaywitz, *supra* n. 5, at 14.

74. *Id.*

75. *Id.*

76. *Id.* at 15.

77. *Id.* at 13–14, 16–17.

78. Nicolson & Fawcett, *supra* n. 9, at 2; Shaywitz, *supra* n. 5, at 13–14; Snowling, *supra* n. 44, at 14.

mented forty-one cases of congenital word blindness.<sup>79</sup> Beginning in 1925, Samuel Orton, an American neurologist, studied over 1,000 children for the problem he called “symbol twisting.”<sup>80</sup> Regardless of the term applied, the result of the acquired and congenital conditions was the same—an inability or diminished capacity to read—but one condition was acquired through a traumatic change to the brain circuitry later in life while the other resulted from congenital wiring of the brain.<sup>81</sup>

As researchers became more convinced of the congenital form of the condition, they turned to studying groups of children to learn more about differences between those who read well and those who did not. One of the most important studies on a large population of children occurred on the Isle of Wight in the early 1970s and distinguished between those who had specific reading difficulties (i.e., dyslexia) and those who had more general problems learning.<sup>82</sup>

In the 1960s and 1970s, scientists began to more systematically examine the brains of deceased dyslexics and discovered important differences between these brains and the brains of those people who did not have dyslexia.<sup>83</sup> The differences existed in areas of the brain known to be associated with language.<sup>84</sup> As examples, the dyslexic brains showed abnormalities including scarring in these areas, the dyslexic brains showed symmetry in

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79. Shaywitz, *supra* n. 5, at 24.

80. Nicolson & Fawcett, *supra* n. 9, at 2; *see also* Michel Habib & Jean-François Démonet, *Dyslexia and Related Learning Disorders: Recent Advances from Brain Imaging Studies*, in *Brain Mapping: The Disorders* 459, 460 (John C. Mazziotta et al. eds., Academic Press 2000) (stating that Orton’s work gave initial credibility to the neurological origins of dyslexia).

81. Shaywitz, *supra* n. 5, at 17.

82. Snowling, *supra* n. 44, at 16.

83. Albert M. Galaburda & Thomas L. Kemper, *Cytoarchitectonic Abnormalities in Developmental Dyslexia: A Case Study*, 6 *Annals of Neurology* 94 (1979); *see also* Shaywitz, *supra* n. 5, at 68 (discussing the “brain bank” study). For later work, *see* Galaburda, *supra* n. 51; Albert M. Galaburda et al., *Developmental Dyslexia: Four Consecutive Patients with Cortical Anomalities*, 18 *Annals of Neurology* 222 (1985).

84. Shaywitz, *supra* n. 5, at 68; *see also* Deborah F. Knight & George W. Hynd, *The Neurobiology of Dyslexia*, in *Dyslexia and Literacy: Theory and Practice* 29, 30 (Gavin Reid & Janice Wearmouth eds., John Wiley & Sons Ltd. 2002) [hereinafter *Dyslexia and Literacy*] (explaining the significance of the studies by Galaburda of seven deceased adults with dyslexia, which located abnormalities in the portions of the brains associated with language).

areas where asymmetry is typical for normal readers,<sup>85</sup> and the dyslexic brains had misplaced cells.<sup>86</sup>

These two approaches—studying large populations to understand their reading differences and studying human brains—have converged in the past twenty-five years. Two events are paramount. The first is work undertaken by Centers for the Study of Learning and Attention with the support of the National Institutes of Health beginning in the mid-1980s. At least one such study, the Connecticut Longitudinal Study at Yale University, is ongoing today. The study included extensive examination of 445 students in Connecticut schools and has provided invaluable insights into how we read and how those among us with dyslexia struggle with reading. The second paramount event in research concerning dyslexia is the development of technology that allows scientists to see the brain as it works, through functional magnetic resonance imaging (fMRI). These two events are explored in the following sections.

### C. The Connecticut Longitudinal Study

The Connecticut Longitudinal Study is funded by the National Institutes of Health and housed at Yale University.<sup>87</sup> Its purpose has been to study reading skills in a large number of children over a long period of time.<sup>88</sup> The study began in 1983 with 445 kindergarten students who were attending Connecticut public schools that had been randomly chosen to participate in the study.<sup>89</sup> Each student was tested for learning disabilities, and each student's progress was tracked carefully. Around 90 percent of those students were still active in the study twenty years later.

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85. Snowling, *supra* n. 44, at 151.

86. Knight & Hynd, *supra* n. 84, at 30 (discussing several studies of autopsied brains).

87. Shaywitz, *supra* n. 5, at 25–26. The co-directors are Bennett Shaywitz and Sally Shaywitz. The study comprises much of Sally Shaywitz's book *Overcoming Dyslexia*, *supra* n. 5. Parts of the book were previously published in an earlier article. See Sally E. Shaywitz, *Dyslexia*, 275 *Sci. Am.* 98 (Nov. 1996) [hereinafter Shaywitz, *Dyslexia*]. For more scholarly treatment by the same author and others involved in the Yale project, see Sally E. Shaywitz et al., *Persistence of Dyslexia: The Connecticut Longitudinal Study at Adolescence*, 104 *Pediatrics* 1351 (1999); Jack M. Fletcher et al., *Cognitive Profiles of Reading Disability: Comparisons of Discrepancy and Low Achievement Definitions*, 86 *J. of Educ. Psychol.* 6 (1994); see also Nicolson & Fawcett, *supra* n. 9, at 3 (citing the 1996 Shaywitz article in a 2008 book to explain the phonological deficit hypothesis of dyslexia).

88. Shaywitz, *supra* n. 5, at 26–27.

89. *Id.* at 27.

### 1. General Findings about Dyslexia

The study has produced many important findings about dyslexia:

- *Dyslexia is dimensional, not categorical.*<sup>90</sup> This means that dyslexia exists on a spectrum, with no definitive marker for when a person is or is not dyslexic.<sup>91</sup>
- *As many as one in five school students might be affected.* This number (20 percent) is much higher than the percent of school-age children generally estimated to have dyslexia<sup>92</sup> or the percentage estimated to be receiving educational assistance for reading disabilities.<sup>93</sup> The higher percentage likely resulted from the fact that every student was tested, not just those students whom teachers or parents suspected of exhibiting traits of dyslexia.<sup>94</sup>
- *Girls are as likely as boys to have dyslexia.*<sup>95</sup> Researchers suspect that social norms may have much to do with the

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90. *Id.* at 28. This conclusion supported earlier findings in New Zealand and Britain. See Phil A. Silva et al., *Some Characteristics of 9-Year-Old Boys with General Reading Backwardness or Specific Reading Retardation*, 26 *J. of Child Psychol. & Psych.* 407 (1985); B. Rodgers, *The Identification and Prevalence of Specific Reading Retardation*, 53 *Brit. J. of Educ. Psych.* 369 (1983).

91. Shaywitz, *supra* n. 5, at 28. The dimensional aspect of dyslexia means that choosing an evaluator can affect the outcome, depending on whether a particular evaluator is more or less inclined to make a diagnosis. See Gordon et al., *supra* n. 25, at 359–362 (describing the training and understanding of clinicians diagnosing ADA disabilities). The evaluator decides which tests to conduct and, based on those tests, may diagnose a disability that needs to be accommodated. *Tests for Learning Disabilities: Introduction*, 37 *Juv. & Fam. Ct. J.* 25, 25 (Nov. 3, 1986) (“The choice of a particular battery of tests has much to do with the individual clinician’s training, practices and procedures dictated by state law, and the developmental level of the student who is to be tested. Therefore, from state to state, there is variance in assessment practices and procedures.”). The tests used for determining dyslexia are discussed *infra* in Part III(E).

Who a court will consider a qualified evaluator is beyond the scope of this Article. In general, school counselors, speech and language specialists, and occupational therapists are not accepted. See Rowe, *supra* n. 2, at 14–15. On the other hand, a court rejected one university’s decision to accept evaluations only from “medical doctors, licensed clinical psychologists, and individuals with doctorate degrees.” *Guckenberger*, 974 F. Supp. at 136.

92. See Am. Psychiatric Assn., *supra* n. 9, at 52 (estimating 4 percent).

93. See Shaywitz, *supra* n. 5, at 29 (estimating 3.5 percent).

94. *Id.* at 30.

95. *Id.* at 31–33; see also Ronald L. Huesman, Jr. & David A. Frisbie, *The Validity of ITBS Reading Comprehension Test Scores for Learning Disabled and Non Learning Disabled Students under Extended-Time Conditions* 3 (paper presented at annual meeting of the Am. Educ. Research Assn. 2000) (available at [http://www.eric.ed.gov:80/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/16/41/f3.pdf](http://www.eric.ed.gov:80/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/16/41/f3.pdf)) (summarizing results of gender

general assumption that dyslexia is much more prevalent in boys. In essence, the classroom behavior of children often varies by gender. Girls who are having difficulty with assignments are more likely to sit quietly, while boys are more likely to act out. The student acting out is more likely to be tested for learning disabilities, resulting in a higher proportion of boys being diagnosed with dyslexia. In the Connecticut study, all students were tested, and while boys tested as dyslexic more often than girls, the difference was statistically negligible.<sup>96</sup>

- *Dyslexia is a chronic condition.* While early and aggressive interventions can overcome many of the challenges faced by students with dyslexia, the condition does not disappear.<sup>97</sup>

## 2. *Phonemes and Reading*

One of the most lasting contributions of the Connecticut study is a comprehensive investigation into how we learn to read and where the dyslexic reader encounters problems. While speaking is innate,<sup>98</sup> reading is not.<sup>99</sup> The symbols that we use to enable reading mean nothing on their own.<sup>100</sup> They come with a code

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proportions in previous studies).

96. Shaywitz, *supra* n. 5, at 31–33.

97. *Id.* at 33. A number of studies confirm this conclusion. Liliane Sprenger-Charolles et al., *Reading Acquisition and Developmental Dyslexia* 13, 71 (Psych. Press 2006) (listing studies reaching the same conclusion and noting the lifelong persistence of dyslexia even with remedial treatment and compensatory strategies); see also Snowling, *supra* n. 44, at 12–13 (discussing a case study of student whose phonological decoding problems persisted into adulthood), 60 (noting that, although most research focuses on children, many problems with dyslexia continue into adulthood), 198 (recognizing that “[a]lthough the symptoms of dyslexia change with age, phonological processing difficulties persist in adulthood”); Maggie Bruck, *Persistence of Dyslexics’ Phonological Awareness Deficits*, 28 *Developmental Psychol.* 874, 882 (1992) (finding that “dyslexics do not acquire appropriate levels of phoneme awareness, regardless of their age or their reading levels”).

98. Shaywitz, *supra* n. 5, at 45; see generally Steven Pinker, *The Language Instinct: How the Mind Creates Language* (William Morrow & Co. 1994).

99. Shaywitz, *supra* n. 5, at 49; see also Snowling, *supra* n. 44, at 63 (noting that reading is an unnatural act).

100. Sprenger-Charolles et al., *supra* n. 97, at 56. A simple exercise I have used in my presentations drives home the point that letters alone mean nothing. I ask participants to identify commonalities in the following three words: leer, lire, read. Common answers include that each contains an “r” shape and that they all have four letters (though that is obvious only to those of us familiar with the unique letters of a certain set of alphabets). For those of us who have learned Spanish, French, and English, the three combinations of letters all mean “to read.”

that must be learned.<sup>101</sup> The code is phonologic, meaning that it is based on phonemes—“the smallest unit of speech that distinguishes one word from another.”<sup>102</sup> English contains just forty-four phonemes, which in various combinations produce all of the words in our language.<sup>103</sup> To be able to read, one must understand this written code and how it relates to spoken words.<sup>104</sup> This understanding happens in a series of steps.<sup>105</sup> First, one must be aware that individual words are themselves composed of smaller, individual parts.<sup>106</sup> These parts represent individual sounds.<sup>107</sup> Then one must link written letters and individual sounds.<sup>108</sup> The final step in understanding the phonologic code is realizing that written words and spoken words are the same.<sup>109</sup> For example, the word *cat* has three phonemes: k-aaaa-t. Before being able to read the word *cat*, one must be able to hear the three sounds that comprise the spoken word, link them to written letters, and recognize that the symbols that comprise *cat* refer to the sounds k-aaaa-t and mean the furry household pet.<sup>110</sup>

This most fundamental level of reading is no more than simply decoding words on a page.<sup>111</sup> While most readers master the

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101. Shaywitz, *supra* n. 5, at 42.

102. *Id.* at 41.

103. *Id.*

104. *Id.* at 50. “Beginning readers throughout the world must learn how to decipher print, how to convert an array of meaningless symbols on paper so that they are accepted by a powerful language machinery [in the brain] that recognizes only the phonologic code.” *Id.*

105. Snowling, *supra* n. 44, at 62–74 (exploring various theories for learning to read).

106. Shaywitz, *supra* n. 5, at 44.

107. *Id.*

108. *Id.*

109. *Id.* Other researchers explain the process this way:

Children begin reading by recognizing words based on visual features or context. After gaining some knowledge of the alphabet and its associations with speech sounds, children begin using a few prominent letters in words as phonetic cues for identification. Then as they gain a full understanding of the mapping of print to sound, children begin to decode words letter by letter in their entirety. Finally, as their vocabulary and automaticity improve, they consolidate common letter sequences, identifying them as a whole, and begin to read new words by analogy to known ones.

Peter E. Turkeltaub et al., *The Neurobiological Basis of Reading: A Special Case of Skill Acquisition*, in *Language and Reading Connections*, *supra* n. 59, at 111.

110. Shaywitz, *supra* n. 5, at 42–44.

111. *Id.* at 51. In presenting these ideas to different groups, I have used the following, admittedly unscientific, example to demonstrate how much we take for granted the simplicity of decoding words:

Can you read this?

decoding skill quickly, it is the stumbling block for dyslexic readers.<sup>112</sup> Learning to link letters to sounds does not come easily; even after the linkage is established, the neural pathways used are often not the most efficient.<sup>113</sup> Because dyslexic readers are able to read and process information only by using secondary mental passageways, they work much more slowly and laboriously.<sup>114</sup> Sometimes, the dyslexic person will have difficulty retrieving the right word, selecting instead a word with similar phonemes (e.g., “ocean” v. “lotion”).<sup>115</sup>

But the difficulty with the fundamental level of decoding does not mean that the more sophisticated level of reading—the mental work that we all associate with effective reading—is also compromised. The higher level reading abilities may be unimpaired or even outstanding.<sup>116</sup> These abilities include a comprehension of semantics (i.e., vocabulary), syntax (i.e., grammar), discourse (i.e., connecting sentences), and reasoning.<sup>117</sup> (Figure 1 below demonstrates the lower and higher levels of language systems and reading.<sup>118</sup>) Different students with dyslexia may exhibit different weaknesses and strengths. Written vocabulary and grammar may raise challenges,<sup>119</sup> while reasoning is unimpaired. Rote

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Kan uu reed thes?

Kanureedthes?

Kyywxtsllkc?

As participants read the subsequent groups of letters on the screen, they realize that a task they typically do automatically is taking more time and more effort. The final question, “Kyywxtsllkc?” shows that letters alone have no significance. We must learn to associate them with sounds and understand how to use the letter-sound associations to build words.

112. *Id.* The Connecticut Longitudinal Study found that phonemic awareness is the best predictor of reading ability. *Id.* at 55. This study confirms earlier findings. See Snowling, *supra* n. 44, at 76–77 (describing a study of 400 children that showed “a strong relationship between the children’s phonological awareness at 4 years and their reading and spelling achievement at 8 [years],” *id.* at 77).

113. Shaywitz, *supra* n. 5, at 81–84. The brain imaging that maps these neural pathways is discussed in Part III(D).

114. *See id.* at 155.

115. *Id.* at 42–43. The author gives the example of a politician welcoming supporters to “this lovely recession” rather than “this lovely reception.” *Id.* at 43.

116. *Id.* at 53.

117. *Id.* at 41, 53.

118. *Id.* at 52.

119. *See* Gregg et al., *supra* n. 61, at 307–308 (explaining writing challenges of dyslexics); *but see* Shaywitz, *Dyslexia*, *supra* n. 87, at 102 (“Linguistic processes involved in word meaning, grammar and discourse—what, collectively, underlies comprehension—seem to be fully operational, but their activity is blocked by the deficit in the lower-order function of phonological processing.”).

memorization of new terms can be difficult for a dyslexic student, who still may be able to discuss complex ideas on a very high level, using sophisticated reasoning and logic.<sup>120</sup> Similarly, a dyslexic student may read more slowly than classmates, but may excel in oral discussions.<sup>121</sup>

Figure 1

	<u>Levels of Language System</u>	<u>Levels of Reading</u>
Higher	Discourse Syntax Semantics	Comprehension
Lower	Phonology	Decoding

### 3. *Memory and Fluency*

Crucial to decoding and reading is the student's memory—both short-term and long-term. “The most consistently reported phonological difficulties found in dyslexia are limitations of verbal short-term memory.”<sup>122</sup> Short-term memory includes working memory, which is the temporary storage unit of the brain.<sup>123</sup> For example, working memory allows one to remember a phone number provided orally while the caller is dialing.<sup>124</sup> Mental processing, another subset of short-term memory, is equally important. To hear spoken words, the listener must be able to hold individual sounds in short-term memory long enough to integrate them into words and phrases.<sup>125</sup> Translating letters into understandable units called words requires similar processing.<sup>126</sup> Short-term memory also plays a role in reading comprehension: a reader

120. See Shaywitz, *Dyslexia*, *supra* n. 87, at 98–99.

121. Shaywitz, *supra* n. 5, at 54.

122. Janet Hatcher & Margaret J. Snowling, *The Phonological Representations Hypothesis of Dyslexia: From Theory to Practice*, in *Dyslexia and Literacy*, *supra* n. 84, at 70; see also E. Paulesu et al., *The Neural Correlates of the Verbal Component of Working Memory*, 362 *Nat.* 342, 343–344 (1993) (summarizing a study using brain imaging to understand short-term memory).

123. David W. Carroll, *Psychology of Language* 47–50 (5th ed., Thomson Wadsworth 2008).

124. *Id.* at 47.

125. Shaywitz, *supra* n. 5, at 48.

126. Snowling, *supra* n. 44, at 128 (noting that a poor speller seemed to have a problem with short-term memory: “she was unable to segment the word in its entirety before her memory for it declined”), 119–122 (on processing speed); Sprenger-Charolles et al., *supra* n. 97, at 4 (noting that skilled readers are able to process and recognize an average of five words per second).

whose memory does not hold information long enough, or who is expending energy decoding words, will struggle with reading comprehension and likely need more time to read complex material.<sup>127</sup>

In contrast to short-term memory, long-term memory stores knowledge permanently.<sup>128</sup> It allows a reader to remember words mastered in the past and apply them to new situations.<sup>129</sup> Without this ability, the reader must laboriously decode each written word repeatedly.<sup>130</sup> A limited vocabulary stored in long-term memory also slows dyslexic readers.<sup>131</sup>

Related to memory is the concept of fluency, the ability to read a word “accurately, quickly, smoothly, and with good expression.”<sup>132</sup> Readers acquire fluency through practice; reading a word many times strengthens the neural circuitry for word recognition and retrieval.<sup>133</sup> Fluency is supported when the brain recognizes common words automatically.<sup>134</sup> As noted already, dyslexic readers use secondary passageways in reading and thus fail to establish the strong neural circuitry of their non-impaired counterparts.<sup>135</sup> As a result, dyslexic readers struggle to read with fluency. The neural circuitry underlying this process is discussed next.

#### D. Functional Magnetic Resonance Imaging

Among the most important scientific advances in understanding how the brain decodes the written word are neuroimaging techniques that record the brain in action.<sup>136</sup> These techniques

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127. Shaywitz, *supra* n. 5, at 115.

128. Carroll, *supra* n. 123, at 50.

129. See Shaywitz, *supra* n. 5, at 79–81 (discussing the portions of the brain that perform this function); see also Hatcher & Snowling, *supra* n. 118, at 71 (noting a connection between long-term verbal learning and the ability to retrieve phonological information stored in long-term memory).

130. Shaywitz, *supra* n. 5, at 111.

131. *Id.*

132. *Id.* at 105 (distinguishing fluency from automaticity, which refers to “the neural processes that underlie fluent reading”); see also Carroll, *supra* n. 123, at 57 (distinguishing automatic processes from controlled processes and identifying recognition of common words as an automatic language-processing function).

133. Shaywitz, *supra* n. 5, at 105.

134. Carroll, *supra* n. 123, at 57

135. Shaywitz, *supra* n. 5, at 82–84, 155.

136. See Guinevere Eden, *The Role of Brain Imaging in Dyslexia Research*, 29 Perspectives (publication of the Intl. Dyslexia Assn.) 14, 14–16 (Spring 2003) (summarizing briefly

allow scientists to observe the brain as it performs various tasks to determine where the processing functions for each task take place.<sup>137</sup> Among these techniques are positron emission tomography (PET) scans and functional magnetic resonance imaging (fMRI).<sup>138</sup> Although the PET scan was developed first, it subjects the person being tested to radiation.<sup>139</sup> The fMRI offers several advantages over the PET scan: it is completely non-invasive; testing can be repeated over time without harm to the test subject; and it offers tomographic (i.e., sectional) images.<sup>140</sup>

The science behind the imaging techniques is fairly straightforward. Different areas of the brain control different skills,<sup>141</sup> including language processing skills.<sup>142</sup> Blood supply in one area will vary depending on the level of activity that area controls.<sup>143</sup> Activities like reading require brain activity, increasing

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the history of imaging in dyslexia research); Habib & Démonet, *supra* n. 80, at 466 (summarizing thirteen studies through 2000 that compare images of non-dyslexic and dyslexic brains at work); Knight & Hynd, *supra* n. 84, at 32 (noting both benefits and caveats to testing through imaging); see also Sally E. Shaywitz & Bennett A. Shaywitz, *The Neurobiology of Reading and Dyslexia*, 5 Focus on Basics (publication of the Natl. Ctr. for Study of Adult Learning and Literacy) 11 (Aug. 2001) (available at [http://www.ncsall.net/fileadmin/resources/fob/2001/fob\\_5a.pdf](http://www.ncsall.net/fileadmin/resources/fob/2001/fob_5a.pdf)) (explaining how measures of blood oxygenation in brain tissue shows differences in how good readers and dyslexic readers use their brains). Gordon Sherman, *The Possible Impact of Brain Research on Education*, <http://www.greatschools.net/cgi-bin/showarticle/2449> (accessed Apr. 23, 2009).

137. Kenneth K. Kwong et al., *Dynamic Magnetic Resonance Imaging of Human Brain Activity During Primary Sensory Stimulation*, 89 Proc. Natl. Acad. Sci. U.S. 5675, 5675 (1992).

138. Knight & Hynd, *supra* n. 84, at 32–33. These two techniques are most familiar to general readers. Another is magnetoencephalography (MEG), a type of electroencephalography (EEG), which is also non-invasive. *Id.* at 32; Lyon et al., *supra* n. 49, at 4. For an accessible scientific explanation of the MRI, see Anthony Brinton Wolbarst, *Looking Within: How X-Ray, CT, MRI, Ultrasound, and Other Medical Images Are Created, and How They Help Physicians Save Lives* 19–21, 143–167 (U. Cal. Press 1999).

139. Kwong et al., *supra* n. 137, at 5678. This exposure to radiation through the contrast agent makes difficult repeated testing of one subject, limiting intra-subject averaging. *Id.*

140. *Id.* PET scan studies have continued to contribute to the literature. See e.g. E. Paulesu et al., *Dyslexia: Cultural Diversity and Biological Unity*, 291 Sci. 2165, 2165 (2001) (concluding from PET scan study that “there is a universal neurocognitive basis for dyslexia” despite cultural variations such as orthography); N. Brunswick et al., *Explicit and Implicit Processing of Words and Pseudowords by Adult Developmental Dyslexics: A Search for Wernicke’s Wortschatz?* 122 Brain 1901, 1901 (1999) (confirming through PET scans that “dyslexic readers process written stimuli atypically, based on abnormal functioning of the left hemisphere reading system”). For a discussion of the limitations of the fMRI in studying dyslexia, see Turkeltaub et al., *supra* n. 109, at 120–123.

141. Kwong et al., *supra* n. 137, at 5675.

142. Shaywitz, *supra* n. 5, at 75.

143. *Id.* at 70; Kwong et al., *supra* n. 137, at 5675–5678.

blood supply to areas that control reading.<sup>144</sup> Oxygen in blood is magnetic, so an increase in blood is seen as an increase in brain function in an fMRI.<sup>145</sup> This relationship between blood flow and energy metabolism has been understood since the late nineteenth century, although it was initially unclear whether the brain itself was responsible for variations in blood flow.<sup>146</sup> That discovery came in the middle of the twentieth century.<sup>147</sup> PET scans and other techniques were developed soon after to take advantage of this new understanding of how the brain works. The fMRI was developed later, in the early 1990s.<sup>148</sup>

Soon researchers studying learning disabilities began to use the technique.<sup>149</sup> Analyzing the brain images produced by fMRI, researchers identified the areas of the brain used by normal readers and the areas used by dyslexic readers.<sup>150</sup> They discovered that subjects with dyslexia use different parts of their brains for reading than do non-impaired readers.<sup>151</sup> Significantly for understanding the reading and processing problems encountered by law students, these researchers identified three pathways for reading.<sup>152</sup> The normal route works most efficiently; the two alternative routes are slower.<sup>153</sup> Brain images showing the areas activated by normal and by dyslexic readers **illustrate** the difference dramatically.<sup>154</sup>

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144. Shaywitz, *supra* n. 5, at 78–79.

145. *Id.* at 70, 73–74; *see also* Kwong et al., *supra* n. 137, at 5675 (explaining scientific aspects of oxygenation of hemoglobin and its relationship to mapping of brain activity).

146. Hannah Devlin, *Introduction to FMRI: Background*, <http://www.fmrib.ox.ac.uk/education/fmri/introduction-to-fmri/background> (accessed Mar. 8, 2009) (discussing the work of scientists Charles S. Roy and Charles S. Sherrington).

147. *Id.* (discussing the findings of Seymour Kety and Carl Schmidt).

148. *Id.* (crediting Seiji Ogawa and Kenneth Kwong with developing fMRI); *see also* Seifi Ogawa et al., *Brain Magnetic Resonance Imaging with Contrast Dependent on Blood Oxygenation*, 87 Proc. Natl. Acad. Sci. U.S. 9868, 9869 (1990) (explaining the extension of MRI techniques to obtain information about biological function); Kwong et al., *supra* n. 137 (one of the earliest articles on fMRI).

149. Shaywitz, *Dyslexia*, *supra* n. 87, at 103.

150. Shaywitz, *supra* n. 5, at 80–81; Bennett A. Shaywitz et al., *Disruption of Posterior Brain Systems for Reading in Children with Developmental Dyslexia*, 52 Biological Psych. 101, 101 (2002).

151. Shaywitz, *supra* n. 5, at 71–89; Shaywitz, *Dyslexia*, *supra* n. 87, at 103.

152. Shaywitz, *supra* n. 5, at 81.

153. *Id.*

154. *Id.* at 83. For actual images and additional explanation, see the Yale Center for Dyslexia and Creativity, available at [http://www.google.com/imgres?imgurl=http://dyslexia.yale.edu/images/brain\\_image001.jpg](http://www.google.com/imgres?imgurl=http://dyslexia.yale.edu/images/brain_image001.jpg).

Because the alternate pathways used by dyslexic readers take longer for word processing and retrieval than do normal pathways, the reader with dyslexia needs more time.<sup>155</sup> Dyslexic readers lack the automaticity of normal readers in decoding words, so they rely more on context, which also requires more time.<sup>156</sup> In the law school setting, the student with dyslexia probably reads less efficiently than classmates using the normal brain routing system. Given that the dyslexic student's brain works slower, extra time may level the playing field that biology tilted.

#### E. Testing for Learning Disabilities

Determining whether a person has learning disabilities draws upon a number of factors, including tests, observation, and history.<sup>157</sup> The tests typically used to determine learning disabilities examine both achievement and cognitive skill.<sup>158</sup> Specifically, they examine reading comprehension, decoding, vocabulary, short-term memory, and non-verbal reasoning.<sup>159</sup> The most common tests include subtests or portions that can be given independently; while they change over time, the general names are Woodcock-Johnson Test of Achievement,<sup>160</sup> Wechsler Adult Intelligence Test, and Nelson Denny Reading Test.

Two popular tests for determining a subject's reading ability are the Woodcock-Johnson Reading Mastery Test and the Nelson Denny Reading Test.<sup>161</sup> The Woodcock-Johnson test is composed

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155. Shaywitz, *Dyslexia*, *supra* n. 87, at 102 (noting that a child with dyslexia may take over twelve times longer (measured in milliseconds) to process phonemes).

156. *Id.* at 104 (arguing that multiple choice tests, lacking context, penalize dyslexics).

157. Shaywitz, *supra* n. 5, at 20, 93–165 (describing clues to whether a person may have dyslexia and explaining approaches to diagnosing dyslexia in children and young adults).

158. Nonie K. Lesaux et al., *The Effects of Timed and Untimed Testing Conditions on the Reading Comprehension Performance of Adults with Reading Disabilities*, 19 *Reading & Writing* 21, 27 (2006).

159. *Id.*

160. The Woodcock-Johnson cluster of tests includes subtests for math fluency and writing fluency as well. The math portion is a two-minute test requiring the subject to complete simple, one-digit problems of addition, subtraction, and multiplication. Ofiesh et al., *supra* n. 3, at 41. The writing portion is limited to seven minutes and requires the subject to write sentences prompted by a picture and a number of words that the subject must include in the sentence. *Id.*

161. *Id.* at 36. Woodcock-Johnson tests are among the most widely used with postsecondary students who have learning disabilities. *Id.* Both Woodcock-Johnson and Nelson Denny tests include speeded portions and are used to support the accommodation of extended test time. *Id.*

of a number of subtests. One of these, the “word identification” subtest, includes a list of actual words of increasing difficulty; the subject is asked to read as many words as possible.<sup>162</sup> Example words include *is*, *find*, and *mathematician*. Another subtest, called “word attack,” measures the subject’s decoding skills by requiring the subject to decode a list of pseudo-words. Examples of the pseudo-words, which increase in complexity, include *dee*, *straced*, and *bafmotbem*.<sup>163</sup> These subtests are not timed; rather, when the subject misses a certain number of answers, the testing is discontinued.<sup>164</sup>

The Nelson Denny Reading Test is offered in both timed and untimed (or extended time) settings.<sup>165</sup> The “reading comprehension” portion contains a number of reading passages and multiple choice questions that the subject answers on paper. In the timed settings, the subject has twenty minutes; in the untimed setting, the subject has up to forty minutes for the test.<sup>166</sup> The “reading rate” portion is derived from the subject’s performance during the first minute of the “reading comprehension” portion.<sup>167</sup>

One of the most commonly used tests for determining vocabulary, short-term memory, and non-verbal reasoning skills is the Wechsler Adult Intelligence Scale (WAIS).<sup>168</sup> It, too, is composed of subtests. In the “vocabulary” subtest, the subject must provide meanings of words and is scored on the quality of the response.<sup>169</sup> This subtest is untimed; it is discontinued when the answers fall below a certain benchmark.<sup>170</sup> Example words are *winter*, *consume*, and *remorse*.<sup>171</sup> The “block design” subtest is timed; the subject is shown a design and has to recreate it using colored

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162. Lesaux et al., *supra* n. 158, at 26.

163. *Id.*

164. *Id.*

165. *Id.* at 25.

166. *Id.* (allowing “up to 40 minutes to complete the test” in what was called an “untimed” setting); Ofiesh et al., *supra* n. 3, at 40.

167. Ofiesh et al., *supra* n. 3, at 40.

168. *Id.* at 36 (noting this is one of the “most widely used tests with postsecondary students with LD”). All of the tests discussed in this section of the Article are updated, as shown by the different versions of the WAIS used in the studies discussed here. The test used by Ofiesh, Mather, and Russell was WAIS-III, *id.* at 35, while the version used by Lesaux, Pearson, and Siegal was WAIS-Rev, Lesaux et al., *supra* n. 158, at 26–27.

169. Lesaux et al., *supra* n. 158, at 26.

170. *Id.*

171. *Id.*

blocks.<sup>172</sup> The “digit span” subtest requires the subject to repeat strings of numbers given orally. The strings increase in length, and the subject must repeat each digit in the string both forward and backward. The subtest ends when the subject fails to provide a single string correctly in both directions.<sup>173</sup>

The following subtests determine cognitive speed. The Wechsler “digit symbol” subtest provides the subject with two minutes in which to copy symbols paired with numbers.<sup>174</sup> The Woodcock-Johnson “visual matching” subtest allows the subject three minutes in which to locate and circle the identical numbers in a row containing six numbers.<sup>175</sup> The Woodcock-Johnson “retrieval fluency” subtest provides a category (e.g., things to drink) and asks the subject to name as many items as possible in that category.<sup>176</sup>

Together these tests can determine the fundamental deficits in dyslexia: decoding skill, using both real words and pseudo-words; reading comprehension, in both timed and untimed situations; reading rate; short-term memory; non-verbal reasoning skills; fluency in retrieving words; and cognitive skill. In testing young adults, as opposed to children, the evaluator should bear in mind the educational level of the person being tested.<sup>177</sup> A person with a college degree is unlikely to struggle at word identification tests, but may show the hidden disability in tests of oral reading or timed comprehension.<sup>178</sup>

Testing is just part of the diagnosis, especially for those beyond secondary school age. The evaluator observes the subject carefully throughout the evaluation; the evaluator may also review observations made by teachers in the past as part of learning the subject’s history of reading and language challenges.<sup>179</sup> “A developmental history of difficulties with language, particularly phonologically based components of language, often provides the clearest and most reliable indication of a reading disorder.”<sup>180</sup> Indicators include learning to read late, laborious reading, poor

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172. *Id.* at 26–27.

173. *Id.* at 27.

174. Ofiesh et al., *supra* n. 3, at 40.

175. *Id.*

176. *Id.*

177. Shaywitz, *supra* n. 5, at 163.

178. *Id.*

179. *See id.* at 150–165 (providing anecdotes of young adults with dyslexia and emphasizing the role of each person’s history in reaching a diagnosis).

180. *Id.* at 156.

spelling, and a need to devote extra time to reading.<sup>181</sup> Additional clues include vulnerability to noise and movement while reading, as well as difficulty learning a foreign language.<sup>182</sup>

#### IV. ACCOMMODATING WITH EXTRA TIME

Once it is accepted that learning disabilities exist and slow the processing of written information, and that tests can determine the level of disability a student experiences, the question turns to accommodations that level the playing field. A frequent accommodation requested for students with learning disabilities is additional time,<sup>183</sup> which is linked to the phonological weakness of dyslexic students.<sup>184</sup> One of the leaders of the Connecticut Longitudinal Study and the author of numerous articles and books on dyslexia makes a strong case for extra time, based on the findings of both personal interviews and brain imaging.<sup>185</sup> She concludes that reading can be tiring work for dyslexics, requiring “enormous resources and energy.”<sup>186</sup> Timed tests reveal that decoding remains very laborious for compensated dyslexics; they are neither automatic nor fluent in their ability to identify words.<sup>187</sup> Multiple-choice examinations, too, by their lack of sufficient context, as well as by their wording and response format, excessively penalize dyslexics.<sup>188</sup> This Part reviews some of the scientific literature that has examined extra time as an accommodation.

An early study showed how extra time on tests can level the playing field among students with and without dyslexia.<sup>189</sup> Thirty

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181. *Id.*

182. *Id.* at 116.

183. See Lindstrom, *supra* n. 9, at 231 (“[E]xtended testing is the most commonly used accommodation in test situations . . .”). The testing accommodation typically is double time or time-and-a-half. See Rowe, *supra* n. 2, at 54 (noting request for more time on exams). On the LSAT, however, some students may receive just a few minutes extra for each section. *Id.* at n. 284; see *infra* n. 236 (discussing LSAT time accommodations). The request is most common on exams, though as discussed *infra* in Part V, students sometimes request more time on writing assignments.

184. See Lindstrom, *supra* n. 9, at 231 (discussing extra time on exams to accommodate phonological weakness).

185. Shaywitz, *Dyslexia*, *supra* n. 87, at 102–103.

186. *Id.* at 103.

187. *Id.* at 102–103.

188. *Id.* at 104; see also Sprenger-Charolles et al., *supra* n. 97, at 5–6 (discussing the use of context in reading).

189. See M. Kay Runyan, *The Effect of Extra Time on Reading Comprehension Scores*

-one University of California students were administered reading tests that measured reading rate, vocabulary, and comprehension.<sup>190</sup> Fifteen of the students were normally achieving, while sixteen had learning disabilities.<sup>191</sup> Thirteen of the fifteen normally achieving students completed the test in the allotted twenty minutes.<sup>192</sup> None of the students with learning disabilities did.<sup>193</sup> The extra time that the students with learning disabilities needed to complete the test ranged from four to twenty-nine minutes.<sup>194</sup> Significantly, in untimed tests, the students with learning disabilities performed as well as the normally achieving students.<sup>195</sup> Moreover, the normally achieving students did not perform significantly better when they were given extra time.<sup>196</sup>

Recent work has confirmed the results of this study.<sup>197</sup> In analyzing a battery of tests taken by eighty-four undergraduate students, researchers found that the scores of normally achieving students improved only modestly (an average of 3.59 points) with extra time while the scores of students with learning disability improved significantly (an average of 16.14 points) under extended time conditions.<sup>198</sup> The test group included forty-one normally achieving students and forty-three learning disabled students.<sup>199</sup> All were between eighteen and twenty-five years of age, and all spoke English as their native language.<sup>200</sup> The students were given a variety of tests typically used to test for learning

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*for University Students With and Without Learning Disabilities*, 24 *J. Learning Disabilities* 104 (1991) (discussing how administering a reading test to university students with and without learning disabilities impacted their performance under timed and extra-time conditions).

190. The Nelson Denny Reading Test was the testing instrument used. *Id.* at 105.

191. *Id.* The two groups selected were controlled for ethnicity, gender, age, and scores on the Scholastic Aptitude Test (SAT). *Id.*

192. *Id.* at 106. Two of the fifteen normally achieving students who needed extra time completed the test in three and four minutes longer, respectively, than the twenty minutes allotted. *Id.*

193. *Id.*

194. *Id.* at 107.

195. *Id.* at 106.

196. *Id.* at 107.

197. Ofiesh et al., *supra* n. 3, at 47 (summarized *infra* nn. 193–200 and accompanying text); see also Lesaux et al., *supra* n. 158, at 21–22 (explaining *infra* nn. 200–211 and accompanying text); Lindstrom, *supra* n. 9, at 231.

198. Ofiesh et al., *supra* n. 3, at 44, 47. The average score for learning disabled students rose from 202.65 points to 218.74 points, while the average score for normally achieving students rose from 230.66 points to 232.24 points. *Id.* at 44.

199. *Id.* at 39.

200. *Id.*

disabilities.<sup>201</sup> The tests assessed processing speed, reading comprehension, and reading rate as well as fluency in reading, math, and writing.<sup>202</sup> The students also took a test to assess their intelligence.<sup>203</sup>

The results of the study showed that students with learning disabilities “performed at a slower and more variable rate” than did normally achieving students.<sup>204</sup> Because the study also tested the students’ IQ scores, it concluded that students with learning disabilities needed more time “because they have the knowledge and capabilities to answer questions correctly, but slow reading may hamper their performance.”<sup>205</sup>

A third study focused on reading comprehension, as students with learning disabilities need more time in order to read and process questions on exams.<sup>206</sup> The study examined reading comprehension performance in timed and untimed testing conditions.<sup>207</sup> Sixty-four participants in the study included thirty-three women and thirty-one men, ranging in age from seventeen to sixty. They were drawn from the Vancouver, British Columbia, metropolitan area and included a range of socioeconomic and educational backgrounds.<sup>208</sup> The participants were divided into two initial groups: normal readers and those with reading disabilities.<sup>209</sup> Later, four subgroups were determined, with each initial group divided into two: normal readers were divided into above average readers and average readers, while participants with reading disabilities were divided into below-average readers and those with severe reading disabilities.<sup>210</sup>

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201. The tests included the Wechsler Adult Intelligence Scale-III (WAIS-III) Digital Symbol test; Woodcock-Johnson Tests of Cognitive Ability and Achievement III (WJ III COG and WJ III ACH) Visual Matching, Decision Speed, Rapid Picture Naming, and Retrieval Fluency tests; and the Nelson Denny Reading Test (NDRT). *Id.* at 40–41. For explanations of these tests, see *supra* Part III(E).

202. *Id.* at 40–41.

203. The Kaufman Brief Intelligence Test (KBIT) was used. *Id.* at 40.

204. *Id.* at 46.

205. *Id.* at 47.

206. Lesaux et al., *supra* n. 158, at 21. The authors noted that “individuals’ differences in the accuracy and speed of single word reading account for the most substantial variance in comprehension.” *Id.* at 23.

207. Unlike earlier studies, this one also examined “whether there was a differential influence of vocabulary, short-term memory, and reasoning skills on reading comprehension performance.” *Id.* at 24.

208. *Id.* (noting that the average educational level was grade twelve).

209. *Id.* at 25.

210. *Id.* at 25, 27.

The participants were administered the same test under both timed and untimed conditions.<sup>211</sup> While all four groups benefited from extra time, participants in the lower two groups received the most benefit.<sup>212</sup> Under untimed conditions, the performance of the third lowest group (below-average readers) approached that of the second group (average readers). The performance of the lowest group “remained significantly lower than that of all other groups.”<sup>213</sup> The study’s authors determined that this lowest group lacked not only basic skills but also higher-level processing.<sup>214</sup> On the other end of the spectrum, the normally achieving readers improved performance under untimed conditions, but not significantly so.<sup>215</sup> The study concluded that “increased time for test taking is an appropriate accommodation to compensate for the reading difficulties of individuals with a reading disability.”<sup>216</sup>

Another recent study shows the benefit of extended time for students with learning disabilities, but notes that extended time benefits medium and higher achieving non-disabled students as well.<sup>217</sup> The study included 1,929 high school juniors who were given the 2001 version of the SAT under conditions that varied the time limit.<sup>218</sup> In addition, testing conditions varied in whether sections of the test were timed separately with breaks or whether students were allowed to use the time as they chose. The students were placed in four groups to test the two variables: (1) double time with section breaks, (2) time-and-a-half with section breaks, (3) time-and-a-half with no section breaks, and (4) double time with no section breaks.<sup>219</sup> The final sample included 1,929 students,<sup>220</sup> of which 264 were either learning disabled or had

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211. The Nelson Denny Reading Test (forms G and H) were used. *Id.* at 25.

212. *Id.* at 40.

213. *Id.* at 40, 41.

214. *Id.* at 41.

215. *Id.* at 45.

216. *Id.* at 46.

217. Ellen B. Mandinach et al., *The Impact of Extended Time on SAT Test Performance* 1 (College Bd. Publications, Research Rep. No. 2005-8, 2005) (summarized in Lindstrom, *supra* n. 9, at 233).

218. *Id.* at 4–6. In the actual administration of the tests in the study, students were given shorter portions of the test, not more time to complete the full test. The results were equivalent to double time or time-and-a-half. *Id.*

219. *Id.* at 5–6.

220. *Id.* at 6. Students were excluded from the sample if their score diverged too greatly from earlier test performance or if they indicated in a post-test survey that they had not put much effort into the test. *Id.*

ADHD.<sup>221</sup> The normally achieving students were divided into three ability levels: low, medium, and high. The learning disabled/ADHD students were divided into two ability levels: lower and higher.<sup>222</sup>

This study showed that extra time helps medium and high ability test-takers with and without disabilities.<sup>223</sup> In contrast, the students in the lower ability categories gained little or no benefit from the extra time, again regardless of whether they had disabilities or were normally achieving.<sup>224</sup> The researchers concluded that when students lack knowledge and strategies for solving test problems, extra time does not enhance performance.<sup>225</sup> Extra time seemed to have more of an impact on the math portion of the test than the verbal portion, though in both the math and verbal portions of the test the best testing combination was time-and-a-half with section breaks.<sup>226</sup> The researchers noted in their report that in complex problem solving (e.g., reading comprehension or math problems) extra time may be beneficial, while in answering more straightforward questions (e.g., verbal analogy and sentence completion) extra time confers no benefit.<sup>227</sup>

The general conclusion of these studies and others is that extra time levels the playing field without providing an undue advantage to students with learning disabilities.<sup>228</sup> The first two

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221. *Id.* The study concedes that lumping these groups together diminished the results, but the low number of disabled students in the final sample and the coexistence of learning disabilities and ADHD made it impossible to separate the two groups. *Id.* at 16, 17.

222. *Id.* at 6. Initially, the study had intended to have three ability groups for both normally achieving and disabled students, but the low number of high-level disabled students made that impossible. *Id.* at 6–7, 17.

223. *Id.* at 18.

224. *Id.*

225. *Id.*

226. *Id.* at 16. This testing combination produced the best performance for all groups on the verbal portion and for all but the lowest ability group on the math portion. *Id.*

227. *Id.* at 17. The researchers note that in these more straightforward questions “[e]ither the student knows the answer or does not.” At the same time, they state that more time on math problems “may allow the student the opportunity to work through the problems and obtain correct answers.” *Id.*

While the conclusion that medium and high ability students without disabilities also benefitted from more time in this study seems unsettling, the benefit was greatest in math—not a concern for most law school exams. Moreover, if all students perform better with section breaks, law schools can consider modifying exam procedures for all students to provide this benefit while keeping the playing field level.

228. Runyan, *supra* n. 189; see also Gregg et al., *supra* n. 61 (discussing the timed impromptu essay exam). But for analysis concluding only weak support for the theory underlying the Runyan experiment and other studies, see G. E. Zuriff, *Extra Examination Time for Students with Learning Disabilities: An Examination of the Maximum Potential Thesis*,

studies also show wide variance in the amount of time needed by students with learning disabilities<sup>229</sup> and suggest that the severity of each student's disability determines the extra time that student needs.<sup>230</sup>

In the law school context, the challenges facing the dyslexic student may be pronounced and time is likely to be an issue for many types of evaluation procedures. Long, complicated essay tests are the norm, and law students with learning disabilities need more time to read, parse through, and digest the material in order to work through the legal implications, craft a solution, and write an essay. Although multiple choice tests are not used as frequently in law school, they deprive students with learning disabilities of the opportunity to demonstrate their comprehensive knowledge because the questions lack sufficient context. In classes where students must produce papers within tight deadlines, students with learning disabilities may need more time than their non-impaired classmates to learn new vocabulary, master case names and facts, and read dense legal documents.

#### V. IMPLICATIONS FOR THE LAW SCHOOL CLASSROOM

The findings explored above strongly suggest that extra time is a reasonable accommodation because (a) students with learning disabilities process written information more slowly and (b) extra time can accommodate these students without providing them with an unfair advantage. But whether extra time makes sense from a pedagogical or administrative perspective varies depending on the setting in which the accommodation is requested.<sup>231</sup> This Part first considers the request for extra time in testing sit-

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13 Applied Measurement in Educ. 99 (2000). Notably, Zuriff's analysis does not offer an opposing study to prove that extra time is an inappropriate accommodation, but simply argues against the strength of the support for earlier studies.

229. See Runyan, *supra* n. 189 (reporting the results of an early study that measured the impact of extra test-taking time on students with and without dyslexia); see also Huesman & Frisbie, *supra* n. 95, at 1 (summarizing the results of gender proportions in previous studies).

230. This conclusion suggests that the frequent accommodations of double time or time-and-a-half may be used more for administrative convenience than as accurate measures of each dyslexic student's true needs. See *infra* pt. V(A) (describing potential administrative burdens of offering many different testing periods for timed exams).

231. Lindstrom, *supra* n. 9, at 230 (noting that accommodation recommendations may vary "from one environment to another for the same individual").

uations, then for paper classes, and finally in the context of the legal writing classroom and in other skills courses.

#### A. Extra Time on Exams

In most testing situations, providing extra time for students with learning disabilities makes sense.<sup>232</sup> “Dyslexia robs a person of time; accommodations return it.”<sup>233</sup>

The goal of law school exams is generally understood to be testing the analytical skill of students, not their speed in accomplishing various tasks.<sup>234</sup> While law students frequently use the full time allotted to each exam (typically three or four hours), professors expect students to complete the exam in the time allotted and create the exam with that expectation in mind.<sup>235</sup>

The amount of extra time provided should be closely geared to the individual student’s degree of disability.<sup>236</sup> As shown earli-

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232. See Gregg et al., *supra* n. 61 (discussing the timed impromptu essay exam). Most studies are performed on students taking multiple choice tests, and one such study specifically noted that “it is unclear how these results would generalize to the amount of time needed for essay exams or other test formats.” Ofiesh et al., *supra* n. 3, at 49. Given the processing and writing difficulties students with learning disabilities experience, it seems logical to conclude that they need additional time on law school tests, whether the test is multiple choice, short answer, or essay.

233. Shaywitz, *supra* n. 5, at 314.

234. Rowe, *supra* n. 2, at 54 (referring to presentation of Laura Rothstein at the 2004 Annual Meeting of the Association of American Law Schools). Although the focus of this Article, and particularly this section, is accommodating with extra time, the challenges multiple choice exams pose for learning disabled students must be mentioned. Students with dyslexia may compensate for their disability by gathering clues from context; multiple choice questions by their nature tend to provide less context and thus may not be the best testing tools for students with learning disabilities, even when extra time is allowed. Shaywitz, *Dyslexia*, *supra* n. 87, at 103.

235. Rowe, *supra* n. 2, at 54 n. 286 (noting one expert’s belief that professors would have a difficult time establishing that the goal of a law school exam was to test speed); see also Ofiesh et al., *supra* n. 3, at 37, 47 (noting that most exams actually test both speed and knowledge and suggesting that to truly test knowledge all students should be given more time on exams). Some professors are embracing the idea of untimed exams for all students by, for example, setting aside an extra classroom with a teaching assistant where students who decide they want more time can take the exam. Interview with Hilary Gerdes, Senior Dir. Disability Servs., U. of O. (Feb. 16, 2009).

236. A more precise level of accommodation is possible, as shown by administrators of the LSAT. Rowe, *supra* n. 2, at 54 n. 284 (explaining Van Tol, *supra* n. 10). Based on the level of disability, students may receive just a few extra minutes per test section. See *id.* Thus, the range of time accommodating any students in a single testing cycle could range from a few minutes to many hours.

While double time and time-and-a-half are the most frequently discussed accommodations, schools may offer a variety of time periods. See Gerdes, *supra* n. 230 (discussing the frequency of a 25 percent increase in time allotted at the University of Oregon,

er, learning disabilities exist on a continuum,<sup>237</sup> not on a strict, three-step scale where each student needs no extra time, time-and-a-half, or double time. The standard accommodations of time-and-a-half or double time likely exist primarily for administrative ease on at least two points. First, it is much less of an administrative burden for an exam proctor to announce just two or three stop times (regular time, time-and-a-half, and double time) rather than a range of different times to accommodate every student with learning disabilities. Second, students who have different testing periods would likely need to be in different testing rooms. Few law schools have enough rooms to provide large numbers of students with separate testing facilities.<sup>238</sup> Despite these administrative burdens, the studies discussed in Part IV indicate that students with learning disabilities need widely different accommodations to level the playing field.<sup>239</sup> To achieve fairness, schools should consider the extent to which they can provide more accurate accommodations than simply time-and-a-half or double time. If schools are willing to provide these tailored accommodations, the exam results will be fairer.<sup>240</sup>

An important consideration in providing extra time on exams is the extent to which technology can ameliorate the student's disability. Consequently, most conversations with disability coordinators address the possible role of technology in providing appropriate accommodations. If, for example, a student has auditory strengths and serious reading difficulties, the accommodations may include use of oral exam questions. One option is using questions that are digitally recorded in advance and played back

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especially for law students).

237. *See supra* pt. III(C) (describing the fundamental findings of the Connecticut Longitudinal Study).

238. Space limitations may already be so constrained in some schools that all students needing extra time accommodations are grouped together in a single room. The students receiving double time will be disrupted when the proctor ends an exam for students receiving time-and-a-half. Imagine the disruption with additional stop times, an especially difficult situation for students whose learning disabilities co-exist with ADHD.

239. *See supra* nn. 189–196 and accompanying text (explaining results of experiment with University of California students, in which students with learning disabilities taking a twenty-minute test needed additional time ranging from four minutes to twenty-nine minutes).

240. An additional benefit may be that the classmates of learning disabled students feel less resentful. Knowing that classmates receive extra time in proportion to their disability seems intuitively fairer than suspecting that learning disabled classmates all receive double time.

during the exam. Another option is using questions scanned into a computer that reads the words during the exam. Both options would reduce the time the student needed to struggle with the reading portion of the exam and would reduce the extra time needed as an accommodation.<sup>241</sup>

A small number of professors offer exams under extended time conditions, for example an eight-hour exam or an overnight exam. As the amount of time allowed for the exam increases, the need for accommodation would seem to decrease. Professors design these exams specifically so that students will have time to mull over ideas, rest, and return to the project with fresh insights. Although students with dyslexia may not have as much time for resting as other students, all but the most severely disabled may be able to complete the exam within the allotted time.

### B. Extra Time in Paper Classes

All law schools are required to provide students with at least one “rigorous writing experience after the first year.”<sup>242</sup> Most schools provide this experience by having students write papers, either as part of seminar classes or through independent work with a professor. Additionally, schools are providing more elective writing courses for law students.<sup>243</sup> These experiences typically require students to read large amounts of complex material, and then organize, write, and edit a lengthy paper.

While providing extra time to complete a paper seems a reasonable accommodation for a student who reads slower than classmates,<sup>244</sup> few learning disabled students request this accommodation and even fewer law schools provide it.<sup>245</sup> The most commonly given reason is that each student has an entire term in which to complete the work; problems in completing a paper in such an extended time stem as much from time management, life choices, and discipline as from the disability. Moreover, the

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241. E-mail from Hilary Gerdes, Senior Dir. of Disability Servs., U. of Or., to Suzanne E. Rowe, Prof., U. of Or. Sch. L. (Feb. 19, 2009) (copy on file with Author).

242. ABA 2008–2009 Stands. for Approval of L. Schs. 302(a)(3) (available at <http://www.abanet.org/legaled/standards/20082009StandardsWebContent/Chapter%203.pdf>).

243. ALWD & Leg. Writing Inst., *2008 Survey Results* 22 (2008) (available at [http://www.lwionline.org/uploads/FileUpload/2008Surveyresults\(REVISED\).pdf](http://www.lwionline.org/uploads/FileUpload/2008Surveyresults(REVISED).pdf)).

244. Studies supporting the accommodation of extra time on tests are silent about whether extra time is appropriate for students who are writing papers outside of class.

245. See *supra* n. 11 (providing the results of an informal survey).

several-month period of time for writing papers mirrors the real world (or is more generous), unlike exams that take place in artificially constrained settings of just a few hours.

To assist all students in meeting the demands of writing a major paper, the professor may want to share with the class strategies for accomplishing a large project over an extended period of time. Such strategies may include setting aside time each week to work on the project; setting interim deadlines for researching specific portions; creating an outline; drafting the document, and editing; and arranging a few times to meet with the professor to discuss progress and concerns.<sup>246</sup>

One can imagine several possible accommodation requests that should be denied in the context of a paper class. For example, to address concerns over sufficient time to read and process vast amounts of information and produce a paper, a student with learning disabilities may ask to complete an alternative assignment with less analytical complexity, to simply outline the full paper, or to write several shorter papers instead of one comprehensive paper. Each of these requests should be denied as a fundamental alteration of the course.<sup>247</sup> When faced with similar issues in the context of an exam—a student requested both that long exam questions be broken into component parts and that she be allowed to write an outline rather than an essay—the United States Office of Civil Rights agreed with the law school that such accommodations would fundamentally alter the course.<sup>248</sup> Writing a lengthy paper on a challenging subject tests a student's "ability to understand and analyze a complex factual situation, to recognize the material facts and their relevance, to identify essential issues, to prioritize these issues and then to develop an organized response, applying legal principles to the facts and considering all alternatives in a coherent way."<sup>249</sup> Writing such a paper is probably even more effective than writing exam essay answers in testing the student's ability "to articulate conclusion[s] clearly

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246. For additional ideas, see Rowe *supra* n. 2, at 44–45. These strategies will benefit all students, but may be particularly useful for students with both learning disabilities and ADHD.

247. For a discussion of fundamental alteration, see *supra* Part II(B). See also Rowe, *supra* n. 2, at 15–17 (discussing the process for determining whether a student is entitled to an accommodation).

248. *Villanova U.*, 16 Natl. Disability L. Rep. (LRP) ¶ 170.

249. *Id.* (analyzing goals of essay exams).

and persuasively, demonstrating sound and persuasive reasoning.”<sup>250</sup> The school was not required to modify its exam in order to accommodate the student.<sup>251</sup> Such a conclusion seems even stronger in the context of writing papers.

If a student could produce compelling reasons for needing extra time as an accommodation in a paper course, providing the extra time probably would not impose an undue administrative burden on the professor or other students in the class. This is especially true when the student is working independently of other students and when no class discussions are tied specifically to the completion of the paper, as is the situation in many paper classes. The administrative burden on the professor appears in situations where the student must produce multiple drafts, which the professor must mark and return, and meet with the student to discuss.<sup>252</sup> If the drafts form the basis for class discussion, either because students are presenting their works-in-progress or because the professor is providing general comments on the drafts in a class lecture, then the student is asking to step out of sequence, which could diminish the student’s educational experience.

Furthermore, even if some additional time is required, administrative reasons may dictate that the student complete the paper within a definite window (e.g., by the end of the exam period, by the end of the winter break).<sup>253</sup> If students are being graded on a curve, then the entire class should not be denied grades while one student takes months to complete the paper.<sup>254</sup> As another example, the professor should not have to wait indefinitely (or up to the student’s graduation day) to tie up the loose

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250. *Id.*

251. *Id.*

252. The American Bar Association’s Standards for Accreditation of Law Schools include the following guidance in Interpretation 302-1:

Factors to be considered in evaluating the rigor of writing instruction include: the number and nature of writing projects assigned to students; *the opportunities a student has to meet with a writing instructor* for purposes of individualized assessment of the student’s written products; *the number of drafts* that a student must produce of any writing project; and the form of assessment used by the writing instructor.

ABA 2008–2009 Stands. for Approval of L. Schs. 302(a)(3) (emphasis added).

253. For a discussion of administrative burdens, see *supra* Part II(B).

254. In schools that do not allow the grade “Incomplete,” this option would not be available.

ends of a particular class. Practically, an extension through the exam period or through a short term break (or a few weeks into the summer) should be sufficient; moreover, longer extensions are likely to leave the student working on the old paper while undertaking new assignments in new classes, defeating the purpose of the extension.

Of course, a key issue in granting the accommodation of extra time in a paper class would be whether the extension would fundamentally alter the course for the student. The extra time could be perceived as lowering academic standards if the student was not held to the same overall expectations as other students in the course.

### C. Extra Time in First-Year Writing Classes

In legal writing classes, extra time for individual assignments can be pedagogically problematic.<sup>255</sup> Writing assignments often build on each other, requiring students to have mastered a certain set of organizational paradigms and analytical concepts before proceeding to the next assignment.<sup>256</sup> A student who takes longer on the first assignment may be unable to move successfully to the second assignment with the rest of the class.<sup>257</sup> The student would be unlikely to benefit from class discussions or group exercises on the new assignment, and would likely struggle to produce sufficiently competent work. Moreover, providing extra time for learning disabled students to complete legal writing assignments does not prepare students for the real world of law practice, where judges do not allow learning disabled attorneys longer to file briefs and supervisors do not give learning disabled associates in law firms lighter client loads.<sup>258</sup>

One argument for letting the student with learning disabilities take more time is that the student would be able to see the

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255. Rowe, *supra* n. 2, at 37–41 (discussing accommodations for learning disabled students, some of which require little extra time). The discussion in Part V(C) focuses on more substantial needs for extra time.

256. *Id.* at 37–38.

257. *Id.*

258. *See Zukle*, 166 F.3d at 1044 (noting that doctors in emergency rooms do not receive extra time to accommodate disabilities); *Pandazides v. Va. Bd. of Educ.*, 804 F. Supp. 794, 803 (E.D. Va. 1992), *rev'd*, 13 F.3d 823 (4th Cir. 1994) (noting that unlimited time to take a teacher certification exam was not a reasonable accommodation since such modifications would not be available in real world teaching jobs).

bigger picture—through the professor’s later lectures and class discussions—while still working on an earlier assignment. An additional argument for allowing more time early in the term is that the student with learning disabilities may simply need more time to become accustomed to the new vocabulary and structure of law school arguments. Once the student has mastered these fundamentals, her strong reasoning skills and creativity may allow her to succeed. Flipping the real world analogy, students are not asked to work on real world timetables as they make their initial efforts to write memos or briefs, especially in the early weeks of the term. Instead, professors may provide weeks of instruction on how to write a single memo that later in the semester—or in a summer job—the students will write in a single week. As long as the student is able to produce documents at a normal rate by the end of the term, the argument goes, the student could meet the course objectives.<sup>259</sup>

Modifying the rhythm of the course to suit each student with learning disabilities would, however, be an unreasonable administrative burden on the teacher, especially with the student-teacher ratio currently averaging forty-one students per professor.<sup>260</sup> Consider a teacher doing the following for a class of forty-one students during a single week: (1) grading final memos for most students, (2) holding individual office conferences on drafts of the final memo with others, (3) reviewing even earlier class material with a few others, and (4) marking the first memo written by the student with the most severe learning disabilities.

The best approach may be for a learning disabled student to carry a lighter course load, which would provide extra time for reading, but keep the student on track with the timing of the assignments.<sup>261</sup> Because the typical course load in the first year is fifteen credits per semester, a student who did not take a three-credit course in the fall semester would likely still be classified as

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259. Of course, it is possible that the student with learning disabilities may never be able to produce work at the same speed as non-disabled peers. In those instances, the attorney with learning disabilities will need to either devote more hours (some unbillable) to projects or find areas of law to practice in that require less frequent immersion into new fields with vast amounts of reading.

260. According to a national survey, in 2008 legal writing classes contained an average of 41.65 students in the fall semester and 41.09 students in the spring semester. ALWD & Leg. Writing Inst., *supra* n. 243, at 62.

261. See Reis et al., *supra* n. 45, at 129 (noting that a reduced course load is a compensation strategy employed by highly successful undergraduate students).

full time for standing and financial aid purposes. Once a student becomes familiar with legal reading, it may not be necessary to light-load in the second semester. Because most schools require fewer than ninety credits for graduation, light-loading one semester in the first year should allow the students to graduate on time. A student who light-loaded in both semesters of the first year may need to take summer school courses to graduate on time.

In the most extreme case, such a student may need an extra semester to accumulate enough credits for graduation. While the extra time and expense would be unfortunate, the increased opportunity for success may justify both. Moreover, the student would get a realistic perspective of the working world, where projects may take longer and promotions tied to amount of work produced might be delayed slightly. The school could take measures to reduce the financial impact. If the school used a tuition plateau (for example, charging students a flat fee for taking between nine and sixteen credits), the school could charge slightly less for students with learning disabilities who needed more semesters to complete the course of study.<sup>262</sup> The reduction would reflect the fact that the student took fewer courses—and consumed fewer school resources—during each semester. If the school charged tuition per credit hour, the student would simply pay the tuition over a longer period of time. In both situations, the school might also reduce other fees or offer stipends for housing during the extra semester. In a difficult economy, spending longer in school and having more opportunities for part-time or summer work could actually benefit students in the job market. Given that few students would actually need to take an extra semester and that students have many personal reasons for needing to extend law school, employers would not be able to guess that a student who took an extra semester had a learning disability.

There are a few potential downsides to a lighter course load, but they are negligible compared to the educational benefit. First, a student might use the extra time provided by a light load to focus on doctrinal classes, not the legal writing class. If those doctrinal courses carry more credits than legal writing, a situa-

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262. Reducing tuition for a few students who needed an extra semester could not be seen as an undue financial burden on the law school. *See supra* pt. II(B).

tion that is increasingly less common as legal writing courses are awarded more credits,<sup>263</sup> a student could try to raise his grade point average by ignoring the lower-credit writing course in favor of the higher-credit doctrinal class. Anecdotal evidence suggests just the contrary: most students spend more time on their legal writing classes, even when those classes are awarded fewer credits. Students invest time in legal writing because they recognize the need for the practical skills that the course teaches. A learning disabled student who did poorly in legal writing would end the term with a poor writing sample, a weak reference from the legal writing professor, and insufficient skills for doing the work of the typical summer job.

Another potential downside is that other students could perceive the light load as an unwarranted benefit.<sup>264</sup> But classes not taken during the first year of law school would have to be taken later as a second-year student, a scenario few students would willingly choose. Moreover, if students understood the challenges faced by learning disabled students—a goal that could be accomplished in a short presentation during orientation—they would quickly stop making such arguments.<sup>265</sup> In addition, classmates rarely find out about light loads carried by other students, in large part because students who take the light load are embarrassed by the circumstances that require the accommodation (whether that is a learning disability, family obligations, academic struggles, or something else).

#### D. Extra Time in Skills Courses

With the release of the Carnegie Report, schools will likely try to increase the number of skills courses offered.<sup>266</sup> How stu-

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263. See ALWD & Leg. Writing Inst., *supra* n. 243, at 7 (reporting number of credit hours awarded by semester at the reporting schools). For 2008, during the fall semester of the first year, sixty-seven schools awarded legal writing courses three credits and six schools award four credits. In the spring semester of the first year, fifty-nine schools awarded three credits and two schools award four credits. *Id.* Additionally, almost fifty schools required a third semester of legal writing, *id.*; students would likely realize that skimping in the first two semesters would cause problems later on. Past surveys are available at [www.lwionline.org/surveys.html](http://www.lwionline.org/surveys.html).

264. See *supra* n. 12 (relaying story of valedictorian whose classmates thought she received high grades through an unfair advantage).

265. Shaywitz, *supra* n. 5, at 164–165 (rejecting the notion that students pretend to be dyslexic because the social costs are so high).

266. Action was not as immediate as one might have expected or hoped. According to a

dents with learning disabilities are accommodated in the many types of skills courses depends on the nature of the course, the assignments, and the educational goals. Skills courses with reading-intensive components are likely to encounter some of the same problems discussed above for legal writing courses. These courses include litigation simulation courses, in which students must quickly read and process pleadings and authorities and in a short period draft responsive pleadings, motions, or briefs. Professors designing such courses and disability administrators working with faculty and students to determine appropriate accommodations should reflect on the strategies that have proved successful in legal writing courses, including light loading.

On the other hand, skills courses that primarily involve listening, discussing, or oral advising may draw on the strengths of learning disabled students<sup>267</sup> and require no time accommodations. Such courses may include client interviewing, client counseling, and negotiation.

## VI. CONCLUSION

Learning disabilities do exist, despite the qualms of academics who consider reading second nature. Becoming familiar with the historical development and current scientific understanding of learning disabilities can facilitate better accommodations, and thus better teaching, testing, evaluation, and grading. Schools should provide extra time in ways that address each student's specific learning disability and respect the pedagogical goals of the various courses a learning disabled student may take.

The conundrum is that students are placed in a variety of settings and extra time is an appropriate accommodation in just some. Extra time will level the playing field on the typical three- or four-hour exam, though extra time may not be warranted for an eight-hour or certainly a twenty-four-hour exam. Extra time is rarely requested, and should rarely be given, in classes where the

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national survey, twenty-eight schools have made curricular changes in response to the report, eighty had discussed possible changes, and fifty-one had not discussed or made changes. ALWD & Leg. Writing Inst., *supra* n. 243, at 73.

267. Shaywitz, *supra* n. 5, at 126–127 (including among the common strengths of persons with dyslexia “exceptional empathy and warmth,” “high-level conceptualization and the ability to come up with original insights,” “big-picture thinking,” and “resilience and ability to adapt”).

primary evaluation tool is a long, complex paper that students have an entire term to research and write.

The most challenging situations involve legal writing courses and other skills courses with deadline-driven, writing-intensive components that require large amounts of reading.<sup>268</sup> In these situations, the best accommodation may be allowing the student with learning disabilities to light load during the first semester of legal writing or during any semester in which a reading-intensive skills course is taken. This accommodation would not fundamentally alter the course or impose administrative burdens on the professor, but would provide the learning disabled student with time to master the material.

While frequent light loading could require an occasional student to have to take summer courses or even to extend law school by a semester, the school could adjust tuition to reflect that the student had taken fewer courses (and thus consumed fewer school resources) during the earlier period. The student would have an appropriate accommodation under the Americans with Disabilities Act and still be assured of learning the essential skills for practicing law.

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268. While the focus of this Article is the reading challenges facing law students with dyslexia, these students may have related problems with writing. *See supra* nn. 65, 116, and accompanying text (discussing writing challenges facing dyslexic students). For accommodations needed to address writing challenges, see Rowe, *supra* n. 2, at 37–41.