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**Helping  
Students  
with Learning  
Disabilities  
Succeed in  
College:**



**A FACULTY  
HANDBOOK**



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## Introduction

Working with students with learning disabilities can be both rewarding and challenging. Some people find it difficult to understand why these otherwise capable individuals struggle with the basic skills required for reading, writing, and math. Educators might describe students with learning disabilities as being “lazy” or “not trying hard enough,” descriptors that are often internalized at an early age by students with learning disabilities. Many will go through their education blaming themselves for their difficulties, which can result in a negative self-image and sometimes a self-fulfilling prophecy, where they don’t put forth their best effort because they assume they will fail. A big part of the problem is that many people have inaccurate perceptions of what a learning disability is, with some even questioning its very existence. What is well-established, however, is that learning disabilities, such as developmental dyslexia, have a neurological basis. No matter one’s view, it is important to remember that the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973 require colleges and universities to provide “reasonable accommodations” to students with disabilities. Accommodating students with learning disabilities does not equate to lowering standards.

The disparity that often exists between what is expected of students in high school versus college puts students with learning disabilities at particular risk for failure. Some students will enter college with a well-documented history of accommodations and services for a learning disability, whereas learning disabilities of some gifted students might not become apparent until they encounter the more rigorous requirements of a college education. While the effects of a learning disability are not always as obvious as those of a physical disability, they are still worthy of being accommodated. In order to best serve students with learning disabilities and to help identify these students, it is imperative to have a general understanding of the associated characteristics.

This handbook will provide an overview of learning disabilities as well as the strategies that can be utilized in college settings to benefit students with learning disabilities. The strategies discussed are by no means exhaustive. While unrealistic to expect faculty to apply all of these strategies, this handbook will provide a framework from which they can design and organize courses to best accommodate students with learning disabilities. Some of the solutions proposed in this manual might seem to involve hand holding in a setting where increased independence is expected. However, if properly given, those students who initially require more guidance and support will begin to function more independently around academic tasks.

## Characteristics of Students with Learning Disabilities

Learning disabilities are a heterogeneous group of lifelong disorders that are characterized by an unexpected difficulty in reading, writing, and/or math despite adequate motivation and aptitude. Learning disabilities are not the result of multilingualism, limited educational opportunities, or limited intellectual abilities. However, with the exception of an intellectual disability (formerly known as mental retardation), lower IQs do not preclude a diagnosis of a learning disability. Difficulties with encoding and retrieving information can affect an individual's full scale IQ score, which leads to an underestimation of his or her true abilities.

Within each diagnosis, individual strengths, weaknesses, and overall ability can vary greatly. An area of weakness exhibited by one student may stand out as a strength for another student. The educational and vocational development of individuals with learning disabilities are often impeded by difficulties in acquiring the skills required for active listening, speaking, reading, writing, reasoning, and math. Considering that new information is learned and knowledge later demonstrated using these skills, it is understandable that students with learning disabilities often struggle in academic settings.

Learning disabilities can affect any number of processes involved in learning, including the initial perception of information, the processing and storage of that information, and/or the subsequent retrieval and expression of information. Given the heterogeneous nature of learning disabilities, different students will have difficulty at different points along this process. See Table 1 for an overview of the difficulties faced by this population.

**TABLE 1**

### COMMON PROBLEMS FACED BY STUDENTS WITH LEARNING DISABILITIES

#### Expressive and receptive language problems

- Mispronunciations
- Confusion of similarly sounding words
- Transpositions
- Word retrieval
- Pragmatics of language

#### Auditory and visual memory problems

- Rehearsal
- Storage
- Retrieval

#### Motor problems

- Dysgraphia
- Dyspraxia

#### Attention problems

- ADHD
- Poor habits of attention and organization

#### Social/emotional problems

- Depression
- Poor social relations
- Poor self-confidence and self-esteem
- Poor self-advocacy

## Expressive and Receptive Language Problems

Many students with learning disabilities have expressive and receptive language problems that can negatively affect communication and comprehension. It may be difficult for them to get their point across in both formal and informal settings as well as to understand what others are saying. Not only is it difficult for individuals with learning disabilities to clearly express thoughts, but how they articulate their thoughts can make it difficult for the listener to interpret what is being said.

Students with learning disabilities may have problems with the sounds of language, which can affect reading, writing or speaking through the mispronunciation or misspelling of words. Some students will confuse similarly sounding words that are read or heard. For example, if the word *confide* were used, a student with a learning disability might confuse it with *confined*. Some students will be unable to use the context to self-correct the error. Furthermore, a student with a learning disability might use the word *confide* when speaking or writing, but the context indicates that the word intended was *confined*. Obviously, the latter error is less problematic, as the listener can use the context of what has been said or written to understand the intended meaning.

Deficits in phonological and/or visual processing can lead to transpositions of words, syllables, and numbers when speaking, reading, and writing. While individuals with learning disabilities have difficulty getting sounds in the right order, the idea that they read and write backward is a gross misconception. Word retrieval can be challenging. Individuals with learning disabilities may talk around words and have difficulty finding the right word at the right time, often relying heavily on vague descriptors. This can make conversations laborious for them, as they struggle to say what they are thinking and risk saying it imprecisely. These problems are often evident in dysfluent spoken language, or language interrupted by frequent pauses.

When it comes to the pragmatics of language, adults with learning disabilities do not know how to break into a conversation or ask questions. They have difficulty with idiomatic language and struggle to understand intonation patterns. This can affect their ability to comprehend what someone is saying or follow a conversation. Additionally, they may not detect sarcasm or understand jokes. As a result of these problems, many individuals with learning disabilities prefer not to engage in conversation at all. College students with these problems may be hesitant to participate in class discussions or volunteer responses to questions.

## Memory Problems

Memory problems associated with learning disabilities can interfere with the initial storage of new information or its subsequent retrieval. Auditory working memory, or short-term memory for verbal information, is essential to learning. Before information can be stored, retained, or retrieved, it must first come to the attention of working memory. Some students with learning disabilities have difficulty with rote memory skills (i.e., learning verbatim) while others will struggle to manipulate information before it can be recalled. The problems typically encountered by students with poor auditory working memory include difficulties retaining oral instructions and learning new vocabulary and concepts. Even when this information is learned, some students will have difficulty retrieving it from long-term memory.

Visual memory can also represent an area of weakness for some students with learning disabilities. Students with poor visual memory will have difficulty creating mental pictures or manipulating visual information. These difficulties can pose a challenge in academic courses. For example, students with poor visual memory will have difficulty remembering and recalling formulas in math and science courses.

Many more students with learning disabilities simply have limited strategies for remembering information and high expectations for memory. A common complaint of students with learning disabilities is that they forget a lot of what they learn in class by the time they get home. Additionally, when reading, they cannot remember the first part of what they read by the time they reach the end of the selection. As a result, they have to reread. Often times this is a consequence of the student failing to engage in active learning. Students with learning disabilities may have a poor understanding of the learning process and think that they should be able to hear or read information once and commit it to memory without having done any active work to learn and retain the information. Even the most functional individuals have to study lecture notes and reread text in order to learn new information.

### **Motor Problems**

Motor problems can affect individuals with learning disabilities in a variety of ways. Some students have difficulty with graphomotor skills. For them, writing is an arduous activity. Assuming you aren't ambidextrous, try taking notes using your non-dominant hand at your next meeting or professional conference. This will give you a sense of the experience of students who have difficulty with the motor component of writing. Sometimes their handwriting is illegible, even to them! These individuals may have dysgraphia. While a computer is sometimes useful to help circumvent these problems, some students will also struggle with the motor skills required for keyboarding and manipulating a mouse. Dyspraxia is another motor problem that is associated with learning disabilities. It affects the production of speech by impeding the coordination of muscle movements required to pronounce words. As a result, individuals with dyspraxia struggle to make speech sounds and sequence sounds, which can exacerbate their already impaired reading and oral language skills.

### **Attention Problems**

Problems of inattention are quite common among individuals with learning disabilities. While attention problems such as ADHD do not constitute a learning disability, a large proportion of students with ADHD also have a learning disability. Attention problems manifest in difficulties sustaining focus, particularly when a task is time consuming or especially difficult for the individual. However, the attention problems of some students result from anxiety about their learning problems. The latter case often leads to learning avoidant behaviors. Similar to the memory problems mentioned earlier, many individuals with attention difficulties have not developed good habits of attention and/or learned how to organize their environment to support attention. In addition to poor attention, some individuals with learning disabilities do not know what information is important to focus on and cannot, so to speak, see the forest for the trees. They might be able to discuss a lot of details, but they don't get the big picture.



## **Social and Emotional Problems**

Perhaps the most common characteristics seen in individuals with learning disabilities, and often the least adequately addressed, are social and emotional problems. As a consequence of a lifetime of difficulties in school and criticisms from educators and even family members, individuals with learning disabilities are more likely than their non-impaired peers to have poor peer relations, low self-esteem, poor self-efficacy, depression, and dysthymia. Many are embarrassed by their difficulties and feel inferior to their peers. They tend to have an external locus of control. In other words, they attribute success and failure to external factors. The attribution of success to external factors prevents individuals with learning disabilities from experiencing gains in self-confidence and self-esteem whereas the attribution of failure to external factors might limit their acceptance of their fair share of the responsibility.

Out of embarrassment, many individuals with learning disabilities do not share with others that they struggle with reading, whereas others do not recognize the severity of the problem or are in denial of it. (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). Past research has shown that adolescents with learning disabilities have a higher risk for suicide (Daniel, Walsh, Goldston, Arnold, Reboussin, & Wood, 2006), depression, and anxiety (Arnold et al., 2005) than their nonimpaired peers. Additionally, college students with learning disabilities report poorer emotional well-being (Davis, Nida, Zlomke, & Nebel-Schwalm, 2009). Considering that individuals who experience feelings of depression find it harder to concentrate and think clearly, addressing these “side effects” of learning disabilities is imperative so that their learning is not further curtailed.

## **Strengths**

While the previous sections highlight the weaknesses of students with learning disabilities, these students also have strengths. Individuals with learning disabilities who ultimately achieve success despite their difficulties are those who are persistent. The occasional stubbornness they may exhibit serves them well, as they do not give up easily and are flexible in their approach to difficult tasks and attempt to circumvent their learning problems. Some individuals will exhibit exceptional artistic talents. They may be gifted musicians or have a knack for visual arts. Individuals with learning disabilities are often described as being creative. They approach problems by thinking “outside of the box” and arrive at unique solutions that others might not have considered. Bringing their strengths to their attention improve their self-confidence and self-esteem, and assists them with finding new ways of working around their learning difficulties.

## Language-Based Learning Disabilities

Language-based learning disabilities are the most common type of learning disability and affect an individual's ability to understand and use spoken language (Table 2). The expressive and receptive language problems discussed earlier are commonly seen in individuals with this type of learning disability. The reading abilities of individuals with language-based learning disabilities are affected by their poor phonemic processing skills and inadequate basic reading skills. They have a poor understanding of sounds which makes it a challenge for them to analyze language. The majority of individuals with these types of problems carry a diagnosis of reading disorder, which is commonly referred to as developmental dyslexia.

**TABLE 2**

### **PROBLEMS ASSOCIATED WITH LANGUAGE-BASED LEARNING DISABILITIES**

- Poor phonemic processing skills
- Deficits in sight word knowledge, decoding skills, and spelling skills
- Dysfluent reading
- Poor vocabulary development and limited background knowledge
- Compromised reading and oral comprehension
- Difficulty understanding grammar
- Problems with expressive/receptive language

While students with language-based learning disabilities sometimes have a decent sight word vocabulary, their ability to analyze language at the level of sounds is impaired. As a result, they have difficulty sounding out unfamiliar words. Others will be less adept at identifying words by sight. Depending on the nature of their difficulty, they may confuse words with similar visual configurations (e.g., particularly and practically), transpose sounds and syllables (e.g., felt for left and viarety for variety), or match familiar syllables to other words they know (e.g., particle for participate). As mentioned earlier, others may have difficulty hearing the difference between similarly sounding words (e.g., prepare and repair). These difficulties make it very hard for students with language-based learning disabilities to read fluently. They often get tripped up on words and have to put a great deal of effort into decoding unknown words. This results in a slow rate of reading that is frequently interrupted by pauses and stammering. In addition to mispronunciations, these students tend to ignore punctuation and do not use the purpose of reading to inform their reading rate. For example, when most people read for pleasure, they generally read at a faster rate than when they are reading about a novel concept that they need to learn about. Some students with learning disabilities might struggle to understand what they are reading when reading aloud, whereas others prefer to read aloud.

Considering that vocabulary is developed, in part, through reading, it should not be surprising that many students with language-based learning disabilities have a limited vocabulary knowledge compared to their peers. These students have difficulty providing synonyms for words and often cannot define words without a great deal of circumlocution. Even when they learn new vocabulary, it is difficult for them to use it correctly. Additionally, due to their difficulty processing written language, students with language-based learning disabilities may have limited background knowledge. Taken with their limited vocabulary knowledge, it is often very difficult for these students to make sense of what they are reading and/or hearing. They don't always understand abstract words, idioms, or complex syntax. Problems with oral comprehension also result from difficulties with auditory processing. If the speaker is speaking at a fast rate, it is unlikely that students with language-based learning disabilities will have enough time to process all of what is being said.

Writing skills are also compromised for students with language-based learning disabilities. Spelling problems are very common. Some of these students may provide spellings that demonstrate a poor understanding of sound-symbol correspondence (e.g., *ronde* for *rain*). Others will compensate for their poor phonemic processing skills by relying heavily on visual memory. However, weaknesses in visual memory can lead to transpositions (e.g., *role* for *early*) or phonetically similar spellings (e.g., *advencher* for *adventure*). As previously mentioned, the handwriting of students with learning disabilities may be illegible and their understanding of grammatical structures and punctuation rules limited. Often times, their spoken grammar is far superior to their written grammar. Furthermore, they may generate good ideas, but have difficulty organizing those ideas in written form. Others will struggle with the initial steps of writing and have difficulty developing ideas.

## Nonverbal Learning Disabilities

Many people immediately think of Asperger's Syndrome when they hear the term nonverbal learning disability. While it is true that many individuals with Asperger's have a nonverbal learning disability, for purposes here nonverbal learning disability is not specifically referring to Asperger's Syndrome. Table 3 provides a list of problems commonly experienced by students with nonverbal learning disabilities. Students with nonverbal learning disabilities are often gifted in language areas and exhibit superior vocabulary knowledge. However, they have problems understanding two and three-dimensional space; directionality is a problem and they have difficulty with visualization. In short, a picture is not always worth a thousand words for individuals with nonverbal learning disabilities. These individuals may get lost easily when traveling or have difficulty reading pictures, maps, and charts. Social interaction can also be affected, as they tend to have difficulty interpreting the meaning of facial expressions.

Students with nonverbal learning disabilities may have an excellent memory for information that they hear but are deficient in their ability to commit visual information to memory. While their reading skills are intact, they may struggle with math. Furthermore, they often lack motor coordination, which can make writing very difficult. Issues with organization and time management are often apparent in students who have nonverbal learning disabilities. They may attempt to compensate for some of their difficulties by relying heavily on verbal mediation. In other words, a student who has a nonverbal learning disability may use words to describe visual information to help them make sense of that information.

**TABLE 3**

### **PROBLEMS ASSOCIATED WITH NONVERBAL LEARNING DISABILITIES**

- Trouble understanding spatial relations
- Trouble reading maps, pictures, and charts
- Poor visualization skills and visual memory
- Difficulty with organization
- Math problems
- Difficulty interpreting facial expressions

## Math Disabilities

While learning disabilities are divided into language-based and nonverbal learning disabilities, math disabilities (i.e., dyscalculia) are quite diverse and can result from problems in either of these areas. For example, the language processing problems faced by students with language-based learning disabilities can make it difficult for students to make sense of word problems. Extraneous information can be distracting to this population when solving word problems and they may struggle with multistep problems. Math vocabulary can be particularly difficult for this group of students to grasp. As a result, they may not be able to use terms in word problems to help them determine which operation to apply.

Other students with math disabilities might have the visual-spatial processing problems that are associated with nonverbal learning disabilities. These problems may manifest in problems with visualizing patterns or parts of math problems. Mental math may be particularly troublesome for these students. Additionally, they may possess a limited sequential ability, which makes it difficult for them to detect patterns in numbers and sequence information. Their ability to remember the order of operations or other sequential procedures may be deficient. Students with math disabilities may struggle with words that indicate position or amount. For example, words like before, between, after, most, and fewest are sometimes confusing to this group. Mastery of basic math facts may be limited for students with math disabilities and are evident in a lack of automaticity when solving problems involving the four basic operations. This limits their ability to move on to more complicated and abstract mathematical concepts.

## Learning Styles

The aforementioned characteristics of language-based and nonverbal learning disabilities might lead one to think that learning styles are an important consideration when determining how to best support students with learning disabilities. There is great interest in learning styles at college campuses across the country. With one study noting as many as 71 different models of learning styles (Coffield, Moseley, Hall, & Ecclestone, 2004), one can imagine how daunting a task it would be to determine which model best serves students. Some students may claim to be visual learners, others aural/auditory learners, and still others who think they learn best kinesthetically. Unless course sections are divided along learning styles, it would not be feasible to accommodate everyone using a uniform style. Although learning styles are a hot topic, there is very little empirical support for the effectiveness of catering to learning styles (Pashler, McDaniel, Rohrer, & Bjork, 2008).

Admittedly, with learning disabilities, however, learning styles cannot be ignored. A student with a language-based learning disability will struggle in courses if there is a complete absence of visual material. However, in the same class, a student with a nonverbal learning disability would benefit more from verbal explanations. Students with learning disabilities learn best when multisensory techniques are employed. Therefore, rather than making a class primarily verbal, primarily visual, or primarily tactile in nature, all three modalities should be incorporated into all courses as much as possible.

## Principles of Effective Instruction

Thus far, this handbook has considered the various issues that confront students with learning disabilities and how these problems can impede the learning process. In order to use this information to become more effective in working with students with learning disabilities, one must understand how students learn. While the principles that follow have proven effective when working with students who have learning disabilities, the fact of the matter is that they are simply good teaching strategies (Table 4).

### Provide Direct Instruction

Students with learning disabilities are not good incidental learners. They have difficulty with abstract reasoning and are unable to see underlying generalities. As a result, they need things shown to them directly. To help students with learning disabilities to learn something, faculty need to tell them about it. Providing information and expecting these students to connect the dots is typically ineffective.

**TABLE 4**

### **PRINCIPLES OF EFFECTIVE INSTRUCTION**

1. Provide direct instruction
2. Prevent overloading
3. Provide sequential instruction
4. Teach to mastery
5. Prevent forgetting through practice and repetition
6. Provide informative feedback

### Prevent Overloading

In an ideal world, curricula wouldn't be time-driven. Obviously, a semester is time-limited and there is often a great deal of material to cover during that time. Nonetheless, whenever possible faculty should attempt to limit the amount of information that is taught at any given time. If too much information is provided, not only will students with learning disabilities become lost, they may lose information they already learned. While there is no rule of thumb to guide how much information is appropriate to teach at one time, observations of students' responses can help inform this decision. When students become overloaded they tend to make more mistakes, sometimes when working with information already mastered.

## **Provide Sequential Instruction**

Do not wait for “teachable” moments. It is essential that faculty build a foundation from which more complex skills can be developed. Otherwise there will be gaps in knowledge. Concepts should be taught in a sensible way that provides a good basis for moving on to more sophisticated skills. This helps compensate for difficulties in integrating separate skills and in generalizing or abstracting information.

## **Teach to Mastery**

If one does not teach to mastery it is unlikely that students with learning disabilities will be able to apply that knowledge later on. New skills and concepts should be practiced to the point of automatic mastery. This occurs when the student no longer has to stop and think before responding. Teaching to mastery helps compensate for problems in memory, attention, and discrimination. Granted, this does not prevent forgetting.

## **Prevent Forgetting through Practice and Repetition**

This strategy can be summed up in five words: use it or lose it. The importance of practice and repetition cannot be underestimated, yet often is. Think of any skill in life. How does one get good at it? By practicing it over and over again. A baseball player might spend all day hitting baseballs. Why? The more baseballs hit the better the hitting. Practice does not have to be boring; one needs to be creative and find different ways to provide practice. Furthermore, mastering something that was once a struggle can be very rewarding for students with learning disabilities (and for their teachers).

## **Provide Informative Feedback**

We learn from mistakes by having them pointed out to us. This type of feedback should be immediate—as soon as the mistake is made. Let students know exactly what they need to learn; don’t let them guess. It is essential that difficult tasks get modeled for students. Faculty should demonstrate to students what they are thinking and how they are approaching the problem. Offer students the opportunity to correct their errors or model the correct response and have them practice that response.

## Self-Evaluation of Teaching Methods

Imagine being treated by a physician who didn't keep up with the literature on effective treatments and used the same methods he/she used 20-30 years ago. If fortunate enough to survive, the patient would likely shop for a new doctor. This luxury, however, is not afforded to students who have ineffective teachers, so faculty need to remain aware of the teaching methods proven to be effective. Whether one just started teaching or has been teaching for decades, reevaluating one's approach is always a good idea. Some of the questions to ask include the following: Do I apply the principles of effective instruction? Do I tend to favor one modality over another when presenting new information (i.e., visual presentation, oral presentation, or kinesthetic presentation)? Am I flexible in my approach to teaching and adapt strategies as needed to support students with different needs? Are my expectations clearly and succinctly stated? Am I sensitive to the needs of students who have learning disabilities? Do I have preconceived notions about what knowledge students possess at the start of each semester?

## Preparing for the Semester

Several steps can be taken to help support students with learning disabilities prior to the start of each semester. While there may be times faculty do not know their teaching schedules until days (or maybe even hours) before the semester begins, they should make course syllabi available to the Office of Disabilities Services, the Office of Academic Advisement, and their department office whenever possible. If these offices have course syllabi on file, staff can review the course requirements and course schedule with students who are considering a course in the upcoming semester. The following guidelines help develop a well-organized course that will not only benefit students with learning disabilities, but all students.

## Syllabus

The first contact students will have with course material is the course syllabus. A one to two paged document that simply lists class dates, lecture topics, assigned readings, and exam dates is insufficient. Students with learning disabilities will benefit from a well-organized, detailed syllabus with clearly labeled sections. Many of these suggestions are often included in course syllabi, but they are not always presented in a coherent fashion or in a manner that will benefit students with learning disabilities.

**Course description.** In addition to providing contact information and course prerequisites, the syllabus should begin by offering students a description of the course that is clearly stated, succinct, and not overly abstract. Anticipate the types of questions students might have about what the course will cover and provide an overview of that information. How will information be presented? Will the course be primarily a lecture format or will there be student presentations, class discussions, and/or guest speakers? What other teaching methods will you utilize? This type of information helps set the tone for the course and reduces the likelihood that there will be any surprises throughout the semester for students with learning disabilities.



**Course objectives.** As with the course description, course objectives should be clearly stated and succinct. These are best presented using bullet points. What are the skills and/or knowledge set that students will acquire by taking this course? How will they be able to apply what they learn in other classes or settings? Let students know what you hope to achieve during the semester and how you will go about achieving it. Students should be encouraged to refer back to this section throughout the semester to help them relate the information you present during lectures to these objectives.

**Course requirements.** If students are to succeed in your course, they need to have an understanding of what will be expected of them. Outline the course expectations and requirements with as much specificity as possible. Does the course have an attendance policy? Are there any exceptions to this policy? Explain exactly what students will be required to do throughout the semester and how their performance will be evaluated. This should include more detail about any major papers, projects, or presentations they will have to complete as well as other assignments, quizzes, and exams. If they will be required to participate in any activities outside of class, note those activities here. In terms of quizzes and exams, let students know about the format (i.e., multiple choice, short answer, essay questions) and whether the final exam will be cumulative. Describe the make-up policy and whether there will be opportunities for extra credit.

**Course calendar.** When preparing your schedule for the semester, make every attempt to provide sequential instruction. Organize topics so that you are building a foundation from which more complex skills and knowledge can be developed. Provide students with clearly stated lecture topics next to each date for scheduled class days. The assigned readings that pertain to those topics should be noted alongside or underneath these headings. Ideally, the lecture topics should be accompanied by subtopics, with pertinent readings listed with each of the subtopics. This helps with time management and provides students with some type of structure from which they can organize information. Quizzes, exams, and due dates for assignments and projects should also be listed. It is extremely important that you adhere to the syllabus as closely as possible. If changes in the schedule become necessary, provide students with ample notice and an amended syllabus.

Some students with learning disabilities will present with problems with organization. Therefore, if students are required to complete major projects or writing assignments during the semester and there are no outlines or drafts that have to be submitted throughout the semester, the syllabus should at least include a suggested timeline for when these milestones should be achieved. This will help keep students with learning disabilities on track and allow them to organize their time better.

**Grading procedures.** Similar to the aforementioned sections of the syllabus, this section should be detailed and specific. Tell students about the grading system that you will use. Will grades come in the form of letter grades or percentages? Will you use norm-referenced grading (i.e., A = top 10% of students, B = next 30% of students) or criterion-referenced grading (i.e., A = 90-100%, B = 80-89%)? Provide students with a breakdown of what percentage of their final grade will be affected by attendance, class participation, quizzes, exams, papers, and projects. This should lead into a discussion of how you will grade these assessments. Will points be deducted for incorrect responses on quizzes and exams or will students be awarded zero points for incorrect responses?

This information is needed so that students can determine whether test-taking strategies, such as guessing, would be beneficial. Do you use a rubric when grading papers and projects? If so, distribute it to students so that they know what you will be evaluating.

**Available resources.** Whenever possible, provide students with additional resources that can be utilized throughout the semester. These can include websites or other tools within the field of study that are supplementary and can help provide additional practice and support. Additionally, provide information about other resources that are available at the college (e.g., writing lab, tutoring services, computer lab, etc.).

**Course tips.** Different professors and disciplines have different requirements. Let your students know how to do well in your course. Emphasize that most learning occurs outside of the classroom and suggest that students spend two to three hours studying at home for every hour that they spend in class. Encourage students to utilize your office hours when they are having difficulty or to e-mail you their questions. Provide students with study tips, information on how to prepare for your exams, and if/how they can get feedback on exam questions that they answered incorrectly or dispute a wrong answer. Will you provide practice exam questions or sample papers written by past students that you consider to be good writing? Will you hold review sessions prior to exams? If so, when and where will these sessions be held?

**Information for students with disabilities.** Considering that many students with learning disabilities are embarrassed by their problems and prefer not to share their difficulties with others, include a section on special needs that encourages students with disabilities to meet with you during the first week of classes to make you aware of their needs. This will send a message to students with learning disabilities that you are sensitive to their needs and will increase the likelihood of them engaging in self-advocacy behaviors throughout the semester. This section should also include the location and contact information for the Office of Disabilities Services so that students who are not already registered with the office can start to take the necessary steps required to receive accommodations and services.

## **Textbooks**

As with the course syllabus, make assigned texts available prior to the start of the semester. While not every student will utilize this opportunity, some will. This allows students with learning disabilities to preview the material before the start of the semester or to get a head start on the reading assignments. Additionally, it permits students who use recorded textbooks through services such as Bookshare or Learning Ally to obtain those resources, as not all texts are available through these sources and may take time to receive. When textbooks are not available through these sources, students and institutions can request that they be converted to audio format.

Multiple factors should be considered when selecting which textbook(s) to use. Is the text available via Bookshare or Learning Ally? Does the publisher offer additional resources, such as web-based applications or study guides that provide students with additional practice and exposure to the

material being taught in the text? Before you select which text(s) you will use, preview the content. Is the textbook well-organized with subheadings and provide clear explanations, instructions, and examples? If not, consider other texts.

## **Starting the Semester**

Some students are not aware of the type of work they will be expected to complete in college courses. As noted previously, many students with learning disabilities will come to college having a history of resource room support or special education services. The transition to college can be particularly difficult for this group, as they won't have as much of the individual attention and support they had in public school. Unlike their teachers in high school, college faculty will not (nor should they) chase students down or call their parents to inform them of poor grades. However, this does not mean that there aren't precautionary measures that can be taken to reduce the likelihood of students getting started off on the wrong foot.

## **Review the Syllabus**

Simply handing out the syllabus on the first day of class and immediately diving into the course material is not very helpful. Remember, it is always best to provide information via multiple modalities. Therefore, in addition to handing out the printed version of the syllabus faculty should spend at least the first half of the first class reviewing its contents. Go over the different sections in detail and provide additional information as needed. Ask students questions about each section to check that they understand what the course will be about and your expectations of them. An alternative to this that involves greater student participation is to divide the class into groups and assign each group a different section of the syllabus. The groups then go over their assigned section together. After a period of time, assign the students to new groups, with each group containing one student from each of the original groups who will then teach their section of the syllabus to the new group. The students in the newly formed groups should then quiz each other on the contents of the syllabus. This activity increases the likelihood that students will have a more complete understanding of what the course will cover and what their responsibilities will be throughout the semester.

## **Know Your "Customer"**

While faculty might be inclined at the beginning of each semester to assume that their students already have a certain level of knowledge about the subject matter that will be covered, it is important to remember that all students have varying levels of prior knowledge and experience. Many courses have prerequisites, but successful completion of these courses does not guarantee mastery of the concepts that are needed to succeed in the present course. On the first or second day of the semester, give an informal pretest to assess existing knowledge. Reassure students that this pretest will have no bearing on their course grade. The results can help guide the semester, with additional instruction provided in areas of background knowledge that are particularly weak. Alternatively, faculty can provide students with feedback on their areas of weakness and encourage them to seek out additional

information to improve their understanding as well as suggest possible resources that might be useful to them.

Knowing a little bit about students before introducing course material can be extremely useful. During the first or second lecture, ask students about their interests, experiences, and educational/career goals. This allows professors to provide pertinent examples throughout the semester when covering more abstract concepts or to help clarify information that is unclear to students. This may not always be feasible, particularly when working with larger class sizes. However, one way to work around this is by providing a survey to students that asks about their interests. Then review the results at a later time.

Previously, this handbook suggested that the syllabus should encourage students with disabilities to meet with professors to discuss their needs. Reiterate this point at the start of each semester and make an attempt to meet privately with students who have learning disabilities. Encourage them to utilize office hours when needed and inform them of other resources that might benefit them. Follow-ups can be scheduled once or twice during the semester for feedback from student and professor. At the end of the semester professors can ask what they did that worked and what didn't work. This information should then be used to assist in improving their ability to support students with learning disabilities during future semesters.

## Lectures

Students with learning disabilities are not good multitaskers, which makes lectures particularly difficult for them. Not only do they have to dedicate resources to attending to and processing the often novel information being presented, they have to determine what information is important enough to write down and then circumvent their writing and language processing problems to get that information down on paper. A list of lecture tips are provided in Table 5.

First and foremost, limit the number of distractions in the classroom. Do not allow students to have their cellphones out and do not permit talking to neighbors. It may be helpful to have seating assignments, with the first row reserved for students with disabilities. However, when doing so, it is extremely important that other students in the class are not made aware of this preferential seating, as students with learning disabilities should never be identified to their peers.

Whenever possible, copies of lecture outlines, lecture notes, and/or PowerPoint presentations should be made available at the beginning of each semester, but no later than two weeks before the lecture is given. This permits students with learning disabilities to preview the topics to be covered and provides them with a structure for organizing information encountered in the assigned readings and in the lecture itself. In addition to noting the assigned readings in the lecture notes, note page numbers from the assigned reading next to each major concept where additional information can be found.

Students should be encouraged to write questions and key words when previewing notes and outlines. This will help prime them for the lecture itself. An additional, and perhaps the most important benefit of these materials being provided is that now students aren't hearing information for the first time in the lecture, they are hearing it for the second time. They will be less likely to miss important concepts and they can dedicate more effort to writing down additional examples that further explain or elaborate on the concepts being taught.

**LECTURE TIPS****TABLE 5**

- Minimize distractions
- Preferential seating for students with disabilities
- Make lecture notes and outlines available in advance
- Organize lectures around unifying themes
- Start lecture with an introduction to new concepts and finish with a review
- Teach back method
- Speak slowly and clearly
- Pause after making important points or asking questions and repeat
- Clearly indicate transitions to new topics
- Provide anecdotal examples and use experiential learning when teaching something physical
- Relate content of lecture to assigned readings
- Think out loud
- Apply multisensory teaching methods
- Use audio/visual aids
- PowerPoint
- Blackboard/whiteboard
- Overhead projector
- Videos
- Break up lectures (e.g., lecture, group discussions, class discussions)

**Organization**

When preparing lectures, keep the principles of effective instruction in mind. All lectures should be organized around a unifying theme with information presented in carefully sequenced steps that include demonstration, modeling, guided practice, and independent application. At the outset of each lecture, provide a rationale, objectives, and goals. This should include major questions that highlight the concepts and themes to be discussed. Provide an overview of the important concepts to be covered as well as what you expect your students to learn. Include an introduction to new vocabulary and other important names, places, formulas, concepts, etc.. In the event that the current lecture is a continuation of the previous lecture, take a minute to review the major concepts and ideas that were discussed during that lecture and tie these in to the current lecture. Just as a brief review of the previous lecture should be given at the start of the current lecture, you should end each lecture with a review of the important points and return to the original rationale, objectives, goals, and questions, and discuss how these were achieved and answered.

In addition to leaving time at the end of each lecture to allow for questions from students, saving some time to utilize the “teach back method” is a good idea. Originally developed to be used by physicians to check how well they describe concepts to their patients during clinical encounters, the “teach back method” can help you determine the extent to which you have explained to students

what they need to know in a manner that they can understand. You can begin this process by saying, “I went over a lot of new information today and I want to be sure that I was clear in my explanations. Let’s review some of the concepts that we discussed.” Follow this introduction with specific questions. If students cannot remember the answer to these questions or provide inaccurate answers, clarify the information and ask them to teach it back to you again. Continue with this process until students are able to accurately describe the concept to you *in their own words*. This last part is extremely important. If students repeat your feedback verbatim, it is more likely that they retained the information in short-term memory rather than gained an understanding of what you were trying to teach. Conclude each class with an oral reminder to students about the assigned readings for the upcoming lectures as well as presenting this information on a PowerPoint slide or on the blackboard/whiteboard. Additionally, if there are any upcoming quizzes, exams, or due dates for papers, projects, or presentations, include reminders for these as well.

## **Presentations**

**PowerPoint.** PowerPoint presentations are an excellent way to present information during lectures. However, don’t get too carried away with all of the bells and whistles that this program offers. If you make your PowerPoint presentations too “busy” students with learning disabilities will become distracted and have difficulty focusing on the pertinent information. Boring is always better. More specifically, create presentations that use a solid color for the background (preferably white) and use black text. Do not get creative with the font style; you need to make the text as clear as possible. Font size is also important. Increasing the font size may be helpful in making information clearer for students with learning disabilities. A general rule of thumb is to use a font size between 36 and 44 for titles and a font size between 24 and 32 for the body of the presentation. If the presentation includes graphics, such as charts, graphs, maps, or pictures, simplify the visual processing demands for students with learning disabilities. This can be accomplished by enlarging graphics to help increase their clarity and usefulness.

While it is well known that you should limit the amount of information presented on any given slide, this rule is often violated. If too much information is put on one slide, students will pay more attention to the slide than to what is being said. Include only the major themes or concepts. If there are quotations, definitions, or longer, continuous text to be used, do not include this information on a slide with other information. Rather, present it on separate slides. Furthermore, it is important to be careful not to proceed too quickly through PowerPoint slides and to read the information that is presented on slides. One function that is available on PowerPoint that helps keep students with learning disabilities on track with what is being discussed is the *Appear* function under the *Animations* tab. This function allows the presentation of one bullet point at a time. Every time the mouse button is tapped the next bullet point will appear, which significantly reduces the likelihood of a student looking up to the screen in the middle of a lecture and becoming lost.

**Delivery.** Some students with learning disabilities will have problems with auditory processing and others will be slow to write notes. Therefore, speak clearly and not quickly. Pause after making important points. Emphasize important information and repeat it frequently. Similarly, when posing a question to the class, pause after asking the question and then repeat it. This will increase the likelihood that students with learning disabilities will have a sufficient period of time to retain information in working memory in order to write it down.

Some students with learning disabilities have great difficulty detecting transitions in conversation. Therefore, it is essential to clearly indicate to students when transitioning from one topic to another. Provide a clear segue by summarizing the concept being wrapped up and specifically state when moving on to a new topic.

Whenever possible, provide anecdotal examples of the concepts being taught. This can include using the information obtained at the beginning of the semester about students' interests and aspirations. Increasing the relevance of information for students with learning disabilities will increase the likelihood of them grasping the concepts being taught and retrieving that information at a later time. Additionally, think out loud. Help students understand the ways of thinking within your discipline. Take them through each step of your thought process when working out a problem or analyzing information. This type of modeling will improve the chances of students with learning disabilities adopting your approach when working independently.

Students with learning disabilities may have difficulty sustaining their attention during a lecture. One way to help circumvent these problems is by breaking up the lecture. This can be accomplished by speaking for a period of time and then stopping to initiate a class discussion or have students break out into groups to discuss the information presented before regrouping to talk about what each group discussed.

**Multisensory instruction.** As previously stated, students with learning disabilities learn best when provided with multisensory instruction. Hearing, seeing, and when possible, touching the information required to be learned is beneficial. Supplement words with audio and visual aids. As discussed, PowerPoint is an excellent way of presenting information. However, one can also make use of the blackboard/whiteboard and overhead projector. Use drawings to help circumvent the problems faced by some students with language-based learning disabilities, but always supplement these drawings with oral explanations. Reinforce material taught in lectures by playing videos and using in-class demonstrations. The latter suggestion will help give students hands on experience with the concepts being taught and permit class participation. Furthermore, it will help keep students' interest piqued. Inviting guest lecturers to discuss special topics during the semester can help provide students with another perspective or style of presentation. To assist students with learning disabilities in making connections between the information they read and the information they hear you presenting, relate the content of the lecture to the assigned readings.

## **Instruction in Math and the Sciences**

When covering material in math and the sciences, sequential instruction and repeated practice are essential. As obvious as this may sound, these principles of effective instruction are not always applied. Start out by teaching the easier skills first. Students with learning disabilities will often have gaps in their knowledge, which prevents them from mastering more complicated skills. By providing sequential instruction, they can build a foundation from which these more complicated skills can be developed. Think of building a house. If it's not built on a sturdy foundation it is unlikely that the finished product will be able to stand on its own. Distribute practice sessions in small doses. Observe students as they complete this practice and immediately intervene when you see them making a mistake. Do not wait until they write their final response to offer feedback.

Students with learning disabilities are more likely to memorize procedures in math and the sciences when they are taught rhythmically. In other words, use a script and stick to that script when teaching each step of any procedure or formula. An example that is not specific to math or science but is used when teaching decoding skills to individuals with severe learning disabilities is, "One vowel at the end of the syllable, the syllable is open, the vowel is long, long e says ee." This same script is used, with the necessary modifications, regardless of what type of syllable or vowel sound is being taught. If this type of script is used consistently, with each step stated rhythmically, students will begin to internalize it and apply it when working independently. More so than in other courses, it is extremely important that you think out loud to demonstrate to students how you are approaching problems.

Some students with learning disabilities will have difficulty lining up numbers when solving math problems. When working out math problems for the class or having students solve problems independently, it would be useful to use graph paper. This will limit the likelihood of these students having difficulty aligning the numbers. A common accommodation for students with math disabilities is the use of a calculator. Allow students with math disabilities to use a calculator not only on quizzes and exams, but when completing in-class tasks.

Concepts that are taught in math and the sciences are often abstract and sometimes difficult for students with learning disabilities to grasp. As was discussed earlier, make material relevant to students with learning disabilities. Therefore, make math and science problems applicable to everyday life. Considering the visualization difficulties faced by students with nonverbal learning disabilities, help students visualize problems and information by drawing pictorial representations. Make these drawings large in size and use colors to help students distinguish different aspects of the information being presented. When providing handouts, do not place too much information on one page. If information is cluttered, students with learning disabilities will have difficulty processing all of the information and will be more likely to miss information or make errors in working out problems.



## Assessment of Performance

Professors often use a variety of methods to assess performance throughout the semester. This can include a combination of participation in class discussions and successful completion of homework, papers, projects, presentations, quizzes, and exams. As noted at the beginning of this handbook, accommodating students with learning disabilities does not entail lowering standards. However, as will be discussed in the following sections, there are several considerations to make when both helping students with learning disabilities prepare for these assessments and when grading their performance.

### Class Participation

Whenever participation in class discussion is required, being sensitive to the needs of students with learning disabilities is something to keep in mind. As has already been discussed, some of these students might have problems with expressive language and be hesitant to participate in class discussions. To help circumvent these problems, provide students with a series of discussion questions prior to the class in which the discussion will take place. This offers students with learning disabilities time to organize their thoughts and plan out their contribution. Even then, however, some students might have difficulty contributing. If a student with a learning disability makes apparent that he/she will have difficulty answering questions or contributing to discussions if called upon, discuss with the student alternative ways of assessing his/her participation. For example, encourage the student to volunteer responses when comfortable, or offer them the opportunity to make short presentations. Alternatively, faculty can create a listserv for the class that provides discussion questions. This provides some students with learning disabilities with additional time to plan out and organize written contributions and can help circumvent their difficulties with formulating oral responses on the spot in class.

Contributing to class discussion and being criticized for getting the answer wrong can be embarrassing for any student. This is even truer for students with learning disabilities. While immediate feedback is essential when working with students with learning disabilities, avoid saying things like, “No, that’s not right.” Instead, consider the alternatives listed in Table 6.

### PROVIDING POSITIVE & CONSTRUCTIVE FEEDBACK

**TABLE 6**

#### Avoid these:

“That’s not right.”  
 “That’s wrong.”  
 “You’ve made a mistake.”  
 “That’s not the right way.”  
 “You have five wrong.”  
 “We covered that already.”  
 “Try to remember.”

#### Try these instead:

“Try it this way.”  
 “Make this change and it will be right.”  
 “Here is another way of doing it.”  
 “My turn – I’ll show you.”  
 “You have 15 correct.”  
 “Let’s go over that again.”  
 “Let’s go over that again.”

\* From Kelly, M.S., Kitzen, K.R., Nanni, H. & Welch, J. (2004). *LD ACCESS/AECOM Manual: A Practical Guide to Using Technology with Learning Disabled Adults in Adult Literacy Programs*. New York: Albert Einstein College of Medicine.

## **Projects and Presentations**

When students will be required to complete projects or presentations throughout the semester, they need very clear expectations and requirements. Do not provide vague requirements, like, “provide quality work” or “a comprehensive review of the topic is expected.” Be very specific in what you are looking for. As previously stated, provide students with a rubric that will give them more information on what you will be assessing when they submit projects or give presentations. Not only should this be provided in writing, but also presented orally during class. When students are expected to give presentations throughout the semester, consider assigning students with learning disabilities one of the later dates to permit them an adequate amount of time to organize and execute their ideas. Monitor their progress prior to the due date by reviewing their topic selection, outlines, and materials. Provide them with informative feedback to let them know if they are on the right track or if they need to alter their approach to the assignment.

## **Writing Assignments**

Creative writing, scientific writing, and the writing of papers in response to works of literature entail very different types of writing. Teaching students early on how to think about and write about topics within your discipline is essential. At the very least, students should have a clear understanding of what your standards are for good writing. Otherwise, how could you possibly expect them to meet your expectations? Providing students with examples of good writing from previous semesters and discussing with them what makes these samples good is very helpful. Additionally, they should be given a rubric that informs them of what you will be assessing when reviewing their papers. Once again, this should be accompanied by an oral explanation of the rubric.

Instructions for writing assignments should be clearly written. Keeping with the concept of multisensory instruction, these assignments should be orally discussed in class as well. Outline the steps your students should follow in order to complete these assignments. As mentioned in the section on course syllabi, provide students with a timeline for major milestones and provide oral reminders during class as the dates on this timeline approach. Do not wait until the class immediately prior to the due date to offer reminders. If outlines or drafts are to be submitted, provide students with informative feedback on this work that they can then apply on subsequent drafts and their final product. If outlines and drafts are not required, encourage students to touch base with you if they have questions and give feedback on their work when they request it. All feedback should be provided in both written and oral forms. Alternatively, allow students to record your feedback so that they can refer back to it at a later date.

Considering that formal outlines are often anxiety-provoking to students with learning disabilities and that they may fail to ever complete one, consider encouraging the students to develop a more informal outline. Suggest the use of recording devices to assist with the brainstorming process and offer them tips on how to brainstorm in your field. It might also be helpful for some students with learning disabilities to use recording devices for initial drafts. Students should be encouraged to review their own work. It is helpful for students with learning disabilities to read their written work aloud, as this may help them identify grammatical and other types of errors.

In terms of due dates, be sure to provide a reasonable amount of time for students to complete writing assignments. In some cases, it may be necessary to offer students with learning disabilities additional time to complete these assignments. Use your best discretion to determine whether these types of extensions should be penalized. When grading assignments written by students with learning disabilities, consider evaluating the content of their work rather than their writing mechanics. If you notice that their writing is inferior to their contributions in class, meet with these students and suggest that they look into assistive technology programs, such as Dragon Naturally Speaking. Granted, organization is an important component of writing, but some students with learning disabilities will struggle with this. If you find that they are presenting good ideas in their papers but are having problems with organization, meet with them privately to provide them with tips on organizing their papers and encourage them to utilize the writing lab for future writing assignments.

## **Quizzes and Exams**

Quizzes and exams pose a particular challenge for many students with learning disabilities. Not only do they have to contend with their learning difficulties, but many will experience a sense of dread about exams. The resulting anxiety can compound their learning difficulties when taking exams. There are various considerations that can help increase the likelihood of students with learning disabilities being successful when completing these assessments. Extended time is by far the most common accommodation that is recommended for students with learning disabilities. Some educators frown upon this and argue that, rather than help even the playing field, extended time offers students with learning disabilities a clear advantage over non-disabled students. However, according to the National Institute for Literacy (2009), the benefits of extended time for non-disabled students is negligible.

Special consideration needs to be given to the design and organization of exams for students with learning disabilities. Exams should be clearly typed, preferably in large black letters or numbers, and be either double or triple spaced between test questions. Do not cram too many questions or problems on one page, as this can pose significant difficulties for students with visual processing problems. Additionally, only put questions on one side of the paper, as some students with learning disabilities might get confused and miss questions on two-sided tests.

When tests are comprised of different types of questions, group questions together by type. For example, group all true/false questions together, all multiple choice questions together, and all short answer questions together. Seeing that some students with learning disabilities are prone to making errors when transferring answers from the question booklet to the scantron answer sheet, permit students with learning disabilities to circle answers in the question booklet. When exams involve short answer or essay questions, examine the content of responses written by students with learning disabilities over their organization and writing mechanics. Collect scrap paper with exam booklets and examine outlines or other notes written by these students. Consider using this information in addition to their formal responses to assess their understanding of the material you tested them on. Similarly, when grading math exams, examine the scrap paper, as you may find that some students with learning disabilities had the correct answer on scrap paper but transposed digits or wrote the answer for a different problem when transferring their response to the exam booklet.

A favorite tool of some educators that is used to encourage students to keep up with their reading assignments are pop quizzes. Admittedly, they do help serve this purpose. Unfortunately, this type of assessment may put students with learning disabilities at an unfair disadvantage. Some of these students have difficulty keeping up with reading assignments as a result of their disability. This is not to say that pop quizzes should be done away with completely, but consider the repercussions they could have for these students. One option is to eliminate the effect of these quizzes on your students' final grades. Weekly or bi-weekly quizzes that are announced well in advance may be a better alternative. Assuming that this type of quiz is later reviewed with the class, it can be beneficial to students with learning disabilities, as it helps them determine the areas in which further study is required.

When marking exams, do not just mark answers as wrong and write the correct answer. Provide corrective feedback to students with learning disabilities by explaining the rationale of the question and why the correct answer is better than their incorrect response. Alternatively, time can be spent during class reviewing the exam. This is particularly useful in courses that have cumulative finals. While it is understandable that you might use tests in future classes and not want students to retain a copy of the exam, permit students to come to your office and review their incorrect responses and examine their notes and the text to find the correct answer. Provide students with feedback when they ask you questions or when you notice that they are having difficulty determining where they went wrong.

Not all tests are created equal. Anyone who has ever taken a college course can tell you that different professors administer different types of exams. Therefore, consider dropping the lowest quiz and/or exam grade. Allowing this option helps alleviate test anxiety for any student and also helps account for "messaging up" on exams and permits adjustment to the professor's testing style.

## **Other Considerations**

### **Meeting with Students with Learning Disabilities**

When a student first meets with and informs you that he or she has a learning disability, provide a supportive environment. Ensure that your door is closed to guarantee the student's privacy. Do not question the validity of his or her disability. Rather, ask questions to improve your understanding of the student's needs. Ask what the student sees as being his/her areas of strength and weakness as well as how you might be able to help during the semester. What did former teachers do that worked for the student in the past? Discuss reasonable ways in which you will be able to support the student and note the limitations of that support. This will ensure that the student has realistic expectations about the type of help that will be given. See the appendix of this manual for recommendations that are often made to college students with learning disabilities. Being aware of these recommendations may assist you with identifying additional ways in which you can support your students.

Encourage students with learning disabilities to e-mail you for clarification on assignments or material presented in class and to visit with you during your office hours if they continue to struggle. In terms of assignments, one intervention that may be helpful is asking students with learning disabilities to e-mail you a description of the assignment *in their own words*. Reply by clarifying any areas that you feel are not adequately understood. As previously stated, attempt to schedule meetings

with these students at other times during the semester, preferably right before the midterm and final exam period. Use these meetings to provide students with suggestions for studying and feedback on their performance as well as to get feedback from them on what you have done that worked and areas in which you could have done more. While some of their suggestions may be unreasonable, be supportive and thank them for their feedback. When suggestions are unreasonable, discuss with them what makes it unreasonable.

At some point in your career, you may have encountered a student whom you did not feel was “college material”. When working with students with learning disabilities remember that they may excel in other subjects but have particular difficulty in your class. This does not mean that this student should not be in college. However, there will be other times, particularly at open admissions colleges, where you might have a student who does poorly in all areas and truly isn’t “college material”. For these students, a “plan B” might be needed, but do not take it upon yourself to discuss this with the student. Instead, refer the student to the Office of Disabilities Services for further guidance.

### **Oral Reading in Class**

Some classes will involve oral reading. It is important to be sensitive to the reading problems of students with learning disabilities. Avoid calling on them to read aloud but encourage them to volunteer to read if they are comfortable. Oral reading is an anxiety-provoking experience for students with learning disabilities. George Spache, a pioneer in readability research, found that the physiological reactions of individuals after misreading more than five words on an oral reading task was comparable to the physiological reactions of an individual who was just in a car accident (M.S. Kelly, personal communication, January 10, 2013). Rather than have other students read aloud in class, you should read to them and have them follow along or ask for volunteers.

### **Publically Identifying Students with Learning Disabilities**

It would be wrong to identify a student as having a learning disability in front of their peers or your colleagues. If you have concerns about a student with a learning disability or have become frustrated with some aspect of his/her performance despite your support, meet with a staff member at the Office of Disabilities Services to seek guidance. For more general guidance within your field that does not involve identifying the student, seeking advice from a colleague would be appropriate. Avoid criticizing a student’s performance or response in front of other students. Even if you anonymously use a student’s work as an example of inadequate work, that student will know you are being critical of their work and will still feel a great sense of embarrassment.

## **Final Thoughts**

Learning disabilities are very difficult for outsiders to understand. Even within the field of learning disabilities, there are competing theories about what causes the difficulties faced by these individuals. However, there is no doubt that learning disabilities are very real and potentially debilitating. While you might be inclined to attribute a student's difficulties to laziness or not trying hard enough, please remember that most of these students put much more effort into their academic work than their peers. Some students that you work with will have a very clear understanding of their areas of strength and weakness. Others may not and will require your feedback on what you observe to work and not work for them. As was mentioned at the beginning of this handbook, the sooner that someone makes these individuals aware of how their learning disability affects them and what to do to work around their problems, the sooner they will be able to approach academic tasks with greater independence.

A college degree implies that an individual has certain competencies. If you are hesitant to provide additional support to students with learning disabilities because you believe it will give them an unfair advantage over students without disabilities, consider a student who is blind or physically disabled. You would never penalize a blind student for being unable to read your PowerPoint slides or your typewritten exams. Just because a student with a learning disability cannot process, or has difficulty processing information as you present it does not mean that the student is incapable of understanding the concepts you are trying to teach. In addition to being supportive, perhaps the most important suggestion that can be offered to college professors working with students who have learning disabilities is to be creative. You are the expert in your field. If you are unable to think of new and different ways of presenting information to students, consult with your colleagues and the staff at the Office of Disabilities Services.

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## **APPENDIX**

# **Useful Accommodations & Recommendations**

### **Standard**

Extended time (1.5x or 2x) to complete all examinations, including in-class quizzes and tests, final exams, and standardized tests.

Access to a note taker.

Course-specific one-to-one tutoring as needed.

### **Reading**

Student would benefit from direct instruction in reading comprehension strategies. A method such as reciprocal teaching would be appropriate.

Student would profit from further study of vocabulary and general knowledge. Vocabulary and background knowledge are key elements to general reading comprehension. Spending some time reading newspapers, magazines and novels would result in increased knowledge.

Student needs to take an active approach to reading comprehension. This should include discussing or thinking about the subject matter prior to reading; pre-reading chapter summaries, abstracts, and chapter sub-headings to establish a good cognitive set for reading; and, pausing to summarize or paraphrase information at the end of each paragraph.

Student's comprehension skills could be addressed through listening comprehension. This should include an effort to increase his/her understanding of vocabulary words and build his/her fund of background knowledge. As his/her basic reading skills improve, his/her reading comprehension should be monitored carefully.

When reading texts, student should always read chapter summaries, abstracts, and chapter headings before beginning to read. This will help him/her to develop ideas about what he/she is going to read and to develop his/her "head set" for reading.

Student should make a concerted effort to work on his/her vocabulary skills. He/she should read every day and use a dictionary to define at least two words with which he/she is not familiar. He/she may also benefit from the lessons available at [www.vocabulary.com](http://www.vocabulary.com).

When reading for comprehension, student should read paragraph by paragraph. At the end of each paragraph he/she should try to summarize or restate what he/she has read. He/she should identify vocabulary or concepts that are making comprehension difficult and seek assistance in understanding them.



To further build his/her reading comprehension power, student should actively engage in vocabulary and information development. He/she should try to read magazines, newspapers, and books unrelated to schoolwork to develop her background knowledge and to expand her understanding of word meanings.

Student might benefit from rate training to help him/her improve the efficiency of his/her reading. Rate training should utilize reading materials that are relatively simple for the student. The passages selected for rate training should be approximately 200 to 300 words in length. The student should read the passages silently as he/she times him/herself. He/she should then reread the same passage again, trying to increase his/her rate. He/she should repeat the specific paragraph three to five times, keeping track of the time it takes to complete the paragraph with each reading. As his/her rate increases he/she should select more difficult passages to read. If he/she finds that his/her reading comprehension is sacrificed as his/her rate increases, he/she should discontinue rate training.

## **Writing**

Spelling should not be considered when written work is evaluated. If spelling is to be considered, the student should be permitted use of a laptop computer with a spell check or a hand-held speller.

Student requires help to improve his/her writing. He/she may benefit from being taught outlining techniques to help guide the organization of his/her written work. Vocabulary and grammar instruction should be part of his/her writing program.

Student would benefit from instruction in basic sentence development:

- complete versus fragment sentences
- adding adjectives and adverbs to simple sentences
- combining simple sentences
- knowledge of tense, number agreement and punctuation

Student would benefit from instruction on paragraph development:

- topic sentences and supporting detail sentences
- paragraph style (e.g., varied sentence starters, varied vocabulary, use of transition words)
- paragraph type (e.g., expository, descriptive, persuasive, narrative or compare/contrast)

Student would benefit from instruction in pre-writing skills, such as brainstorming and outlining

Student would benefit from instruction in editing skills. Develop recognition of errors in spelling, capitalization, punctuation and tense agreement.

## **Math/Nonverbal LD**

Use of a calculator for all math courses, for both in-class tasks and examinations.

Since the student's strengths are in verbal areas, it would be helpful to him/her to have detailed, precise verbal explanations when learning math skills, rules, or problem-solving routines.

Simplifying the visual processing demands of various tasks may be useful to the student. Enlarging graphics such as charts, maps, and pictures may help to increase their clarity and usefulness. Color-coding may assist in organization of paperwork.

Student should seek to make the information he/she needs to study and memorize as accessible as possible. It may be beneficial for him/her to increase the visual impact of materials he/she is studying to make them easier to remember. For example, color coding categories of information or enlarging charts and graphs to make them clearer may be helpful.

Student can depend on his/her verbal memory and should exploit that ability when studying. Pairing information or using categories or chains (links) might help to enhance recall. Borrowing verbal mnemonics from others may also be useful.

## **Attention/Memory Problems**

In order to circumvent the attention problems and difficulties in visual memory that make it difficult for the student to recall specific formulas, rules, or dates, he/she should be permitted access to memory devices such as lists of background information (e.g., formulas or dates) to be used in problem solving or essay writing.

The student has attention deficit hyperactivity disorder and should be allowed accommodations in an academic setting. Specifically she should be permitted to take tests in a private location with extended time.

Student should consult with a psychiatrist regarding treatment options for her attention problems.

Student may benefit from using the following strategies to improve attention during studying:

- Use frequent self-monitoring by asking, "What should I be doing now?"
- Schedule time to reflect on thoughts that intrude during studying
- Allow breaks for physical activity
- Distribute practice, schedule frequent shorter study times rather than cram
- Work on active learning; repeat material heard or read
- Allow rewards earned by periods of concentrated studying.

Student would benefit from a "coach" who could help him to sustain his efforts at organization and time management. A school counselor could play this role.

Student should work with a coach to develop strategies to help him/her sustain focused attention during academic or work tasks. A series of books by Edward Hallowell and John Ratey may provide some useful information (*Driven to Distraction*, *Answers to Distraction*, and *Delivered from Distraction*).

## Assistive Technology

Student might benefit from Inspiration software to help him/her organize their thoughts when writing. This program helps to develop and organize brainstorming diagrams and outlines for writing ([www.inspiration.com](http://www.inspiration.com)). He/she might also benefit from the use of Dragon Naturally Speaking, a speech to text synthesizer.

Student would benefit from use of a speaking speller that would help him/her to identify unfamiliar words so he/she could improve their functioning around daily literacy tasks. Information regarding this equipment can be found at [franklin.com](http://franklin.com).

Since student has good keyboarding skills he/she might benefit from the use of a word processor for notetaking. This would help contribute a motor component that might help support his/her memory for class lectures. Information about the Alpha Smart, a highly portable device that allows for easy downloading into a computer, can be found at [alphasmart.com](http://alphasmart.com).

Student would benefit from the use of recorded books. Patient is encouraged to contact Learning Ally ([www.learningally.com](http://www.learningally.com)) or Bookshare ([www.bookshare.org](http://www.bookshare.org)) to obtain recorded books, including textbooks.

Considering the student's average listening comprehension, he/she should explore the use of text-to-speech technology such as Aspire Reader ([www.axistive.com/aspirereader-4-0.html](http://www.axistive.com/aspirereader-4-0.html)) or Snap and Read (<http://www.donjohnston.com/products/snap-read/index.html>), which read almost any sort of digitized text. The use of speech-to-text technology such as Dragon Naturally Speaking ([www.scansoft.com](http://www.scansoft.com)), which converts the spoken word into text that can be word processed, would also be helpful.

Student should consider using a small tape recorder to help him/her remember important information or tasks.

## Study Skills

Student should consider the following study strategies:

- Study in smaller rather than larger doses. Study for a specific amount of time and then take a timed break. This would help to provide the time needed to consolidate new information in memory.
- Record all classes. Use the tape to review or to fill in notes when uncertain about specific information.

- Because writing information appears helpful to memory, rewrite notes after classes as a way to review and reorganize information.
- Focus on the main points and the facts that are related to those points. Categorize the information to be remembered around main points to make it easier to recall. If it is difficult to detect the main points, discuss the information with professors or other students, use chapter headings, subheadings and graphics in textbooks, and look for technical vocabulary that is repeated in lectures, notes, and texts.

When studying, the student should attempt to put the information he/she needs to memorize into words. Outlines or other sequential learning aids may be helpful. Visual information should be enlarged and highlighted to help draw attention to the information to be remembered.

A study method such as SQ3R may be useful. The student should consult the website [www.csbsju.edu/academicadvising/helplist.html](http://www.csbsju.edu/academicadvising/helplist.html). Other university websites have similar information available.

Student benefits from structure inherent in some types of information. He/she should try to impose a structure on other information by grouping, classifying, outlining, or categorizing it. Take advantage of the structure inherent in textbooks and journal articles by reading abstracts and summaries first.

Student's strengths are in verbal areas. He/she should use "self-talk" to complete tasks and assignments. He/she should attempt to translate non-verbal information (pictures, charts, graphs, etc.) into words.

The book, *Learning Outside the Lines* (authors Mooney and Cole, publisher Simon and Schuster) may be a good resource for the student. It has many suggestions for college students with learning and attention problems including ways to manage time, get organized, and learn study skills.

The use of memory strategies such as rehearsal, grouping, classification, and association may help the student increase his/her ability to recall information. Although written for younger students, the book *Keeping Ahead in School* (author Mel Levine, publisher Educator's Publishing Service) may be a helpful resource for developing these skills.

The student's studying should focus on verbal (rather than visual) strategies. As he/she is reading, he/she should stop at logical points (paragraphs or short sections) and summarize what he/she has read. He/she should question him/herself to insure that he/she understands what he/she is reading. If he/she finds vocabulary and concepts that he/she does not understand, he/she should seek clarification by further reading, re-reading, going to other written sources, or asking other people for assistance. He/she should make an effort to produce written summaries of what he/she has read to support his/her recall. Outlines may be superior to diagrams as study aids.

Student needs to create a realistic timeline for studying for tests. When test dates are first announced, he/she should list the dates of tests on a large wall calendar in plain sight. Hours needed for study should be calculated and study dates and times written on the calendar.

Given that the student learns best through listening, it is recommended that he/she be allowed to tape class lectures so that he/she can listen to them to study for tests. He/she should also tape record his/her own summaries of important material from textbooks and/or lecture notes and listen to the tapes in order to memorize material.

Given the student's good visual skills, he/she should prepare for tests by drawing pictures or diagrams of test material and write in important words or information to be memorized. This approach is best suited for biology, history, as well as other subjects. After studying them, he/she should attempt to visualize the drawings with his/her eyes closed and recreate the drawings from memory. Continue practicing until all necessary information can be visualized and written from memory.

Student needs to understand that repetition is necessary for effective studying of test material. Lists of facts, keywords, and/or summaries must be practiced many times to prepare for tests. Oral and written repetition of material is recommended. For example, if memorizing lists, first read the list aloud, then look away or close your eyes and repeat the list as well as you can. After that, look at the list and write it out. Then write as much as you can from memory. Continue until you can repeat the list and write it from memory. When possible, arrange the key words into a pronounceable nonword or common abbreviation (FBI, CBS, ABC, for example) that can be used to recall the information for tests. The names of the Great Lakes are remembered by HOMES that stands for the first letters of the lakes Huron, Ontario, Michigan, Erie, Superior.

To study textbook material more effectively, the student needs to avoid highlighting sentences in the text. Instead, he/she should write a short summary of important information in his/her own words for each paragraph if the material is dense (biology, for example). If the subject matter is less detailed, he/she should write a short summary of important information for each page. The student should think about the material before he/she writes the summaries. To study for tests, these summaries should be rewritten in order on another piece of paper and memorized.

When studying for a test based on a textbook, first read the introduction to determine the main ideas and the purpose of the text. Read and write down chapter titles and side headings to determine the most important points. Take notes under these headings. Examine all of the illustrations and read the captions. If there are questions at the end of each chapter, read the questions, write out the answers, and then recite the answers aloud or rewrite them until memorized. Write your own questions on information that you think might be important. Be sure to check on the correctness of your answers by referring to the text itself.

## **Test-Taking Strategies**

Student needs to carefully read the instructions before starting the test to ensure it is completed properly.

Student needs to look through the entire test prior to starting to determine how much time needs to be dedicated to each section and answering easier questions first.

Student needs to save time at the end of the test to:

- Check answers for errors (e.g., putting the answer on the wrong line, incorrect answers).
- Ensure that all questions have been answered.
- Complete most difficult questions.

When confused by reading a question, the student should read the question once more. If the question is still unclear, the student should circle the question and return to it later.

When taking a multiple-choice test, the student needs to:

- Check the instructions to determine whether incorrect responses are penalized. If they are not penalized, they should try to narrow down response options and take a guess.
- Read the question immediately before reading each response option.
- Respond to test items they find easier and then return to more difficult items.
- Cross out response options they know to be incorrect.
- Cover response options when reading questions and attempt to answer the question on their own. After doing so they should check the response options and see if any match their answer.
- Read every response option even if they believe they have already found the correct answer.
- Save time at the end of the exam to review their work and make sure they have not forgotten to respond to any questions.

When taking a written test, the student needs to:

- Answer short answer questions first.
- Create an outline before beginning essay questions in order to organize their thoughts.

If the instructor reviews the exam at a later date, the student needs to attend this class, as an exam review often reinforces information in long-term memory and may help them on future exams.

When preparing for standardized tests, the student should begin by taking practice tests untimed and allowing him/herself to develop a good understanding of the types of reading materials and questions that are presented. Once he/she is able to perform well on practice tests untimed, he/she should then begin to work on decreasing the amount of time it takes him to complete practice tests.

When taking multiple choice tests, the student should read the questions prior to reading the passages to establish a purpose for reading.

## Acknowledgements

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