Managing a Diversity of Learning Styles

Many colleges and universities are grappling with increased diversity due not only to a rise in immigration and globalization but to the growth of students with learning disabilities (National Longitudinal Transition Study [NLST] 2011). According to the National Center for Learning Disabilities Report (NCLD, 2014), 1 in 5 individuals have learning and attention issues. That same study reports that 67% of students diagnosed with a learning disability are enrolled in higher education. The challenge for many instructors in higher education institutions is that there are no specific recommendations for how to better engage and instruct those with learning differences. The instructors are only provided with a letter stating the basic accommodations the student is allowed such as extra time on exams, exams in low distraction environment and use of an audio recording device and/or note taker. Unfortunately, as higher education classrooms become more diverse, the teaching methodologies stay the same and are not keeping pace with the learning needs of the students (Kraglund-Gauthier, Young, and Kell, 2014).

Students with learning disabilities who go without necessary accommodations are being prevented from reaching their full potential. By identifying broad areas where learning disabled students have deficits and then changing classroom practices to address these deficits, we can improve learning across a diverse group of students (Black, Weinberg and Brodwin, 2015). The intention of this article is to introduce new teaching methodologies based on cognitive
neuroscience principles that are easy for higher education instructors to implement and can have a positive effect on both learning disabled and non-learning disabled students. The strategies are presented in two broad-based categories that address the key challenges for those with learning disabilities: Organization of course material and learning through a multi-media approach to course design. These strategies are designed to increase the inclusiveness of the learning environment by providing a diverse group of learners with more choices for accessing and comprehending information, for demonstrating what they know, and for increasing motivation and persistence. The strategies are based on research from CAST (2011) and supplemented with information from focus groups of students from the Disabled Students Program (DSP) at the University of California, Berkeley.

**Organization of Course Material**

Many of the learning disabled have difficulty organizing material both mentally and physically. A first step is to help facilitate organization is with the course structure.

**Syllabus**

Make your syllabus available before the course begins and describe all assignments, due dates, grading, classroom policies and format of exams. This information will help students decide whether it will fit with their learning style and strengths. The syllabus should provide a clear road map outlining the goals of the course and how the different assignments contribute to these goals. Being very explicit about how the assignments, exercises and cases are tied to learning goals, and how achieving these learning goals will contribute to the students’ personal success, greatly increases motivation (Wiggins and McTighe, 1998).
The syllabus should include the required texts so students can get an audio book if necessary. A lecturer can give options for books that provide the same content but in different formats because some books work better for certain learners than others. For example, some books are text heavy with few visuals whereas other books use many diagrams, illustrations color graphics and maps. Many publishers have created multimedia online supplements that include additional cases, videos, exercises, self-assessments, practice exams, that students in the DSP program report have been very helpful.

**Course Management System (bCourses)**

Many students with learning disabilities have special application programs for their smart phones that coordinate with the course management system and can alert them to due dates and assignments. Students should be given both written and oral instructions of how to access the materials and where the materials can be found on the website. It is also useful to have folders in the course management system clearly labeled such as Powerpoints, Lecture Outlines, Lecture Notes, and Videos. Although assignments are written in the syllabus and are prominent in a course management system, it is helpful to make announcements in class to remind students to check in regularly to the course website.

**Lecture Outlines**

Organization of the lecture content is a challenge for many with learning disabilities so it can be helpful for the instructor to provide weekly lecture outlines. Provide the outline prior to class on the course management website because it can help students organize information from the text and assimilate it to lecture. Handing out the outlines in class for those who have difficulty remembering to download the outlines will help those students follow the lecture better. Posting
Powerpoint slides prior to class and handing out the slides before class also allows students take notes on the slides and organize lecture content.

**Learning with a Multi-Media Approach to Course Design**

According to the CAST (2011), “Good lecturers use a variety of techniques to make their structure more explicit and memorable, and to reduce the cognitive load in other ways.” A multimedia syllabus is highly recommended for accessibility of content that includes texts, projects, activities, cases, exercises, assessments, video, websites, and other media. All media should be available for easy access through a simple click of the mouse.

**Overlapping but Complimentary Content**

CAST (2011) recommends that instructors use a variety of teaching tools that overlap in content presented but be different in the examples used and activities or cases associated with the concepts. The following are some teaching strategies based on UDL concepts:

- **Powerpoint slides.** The slides should only contain key points to structure the lecture or introduce a new topic or summarize a section. They are to provide structure and not substance. Graphic visuals are an alternate representation of the content and complement it rather than restate what has been said verbally.

- **Video accessibility.** When using video for a case study or example, post the link to the video before class and have it accessible after class so students who need more time to process the information and can watch it at their own pace. When possible, showing videos with closed captioning can greatly enhance the experience for those who have auditory processing challenges (DSP focus group).
• **Exercises and activities.** CAST (2011) states, “The high interactive nature of small groups overcomes the passivity of lectures and books, making material more relevant and engaging for many, and provides the potential for complex active group based construction of knowledge rather than simple delivery of information.” If using an exercise, it can be helpful to give instructions for the exercise in advance of class if it requires reading (DSP focus group). Printing the instructions and then discussing with the class the rules and expectations so the students understand the purpose and process helps students with engagement and understanding. When debriefing the exercise in a class, also given students a handout of “take home points” of what they should have learned in the exercise, and later post these on the course management website. This helps support learners who have a difficult time fully engaging in the exercise or who are not able to process the information in discussion fully (see also class notes).

• **Case discussion.** A problem for those with auditory processing challenges is they often have difficulty keeping up with the discussion. Warm calling that is, letting the student know you will be calling on them to talk about a certain concept can improve participation (DSP focus group). Also, allowing students to submit an analysis prior to class that the instructor can comment on in discussion helps to increase inclusion (DSP focus group). Give take-home points at the end of the discussion which helps those who could not follow the conversation.

*Videotape Lectures*

Videotaping each lecture in its entirety and having it on the course website allows greater accessibility of the course material for learning disabled students than the live version, and it increases accessibility for students where English is a second language. The video allows the
information to be reviewed at any time, at any pace. Closed captioning of the video is very helpful to those with auditory processing challenges. Youtube will close caption on request and there are free websites for adding closed captioning.

Class Notes

To improve acquisition and comprehension of course content, instructors can collect students’ notes from lecture and display them to everyone enrolled. Each week, five or six students per lecture are responsible for taking notes and then sending them to the teaching assistant to post. The notes are not graded but part of students’ participation grades. The benefit of students’ notes is that is captures and expresses the content from lecture in different ways. CAST (2011) research found that this type of note taking is more effective than a single paid student note taker because of the variety of ways the information is captured and expressed can engage a more diverse audience.

Online Discussions

According to CAST (2011) research, students post in online discussions a wide range of information that can help illustrate the course concepts in different ways. The level of engagement is strong with peers answering each other’s questions. The online discussions work well when it is part of the participation grade because the quality and depth of discussion is enhanced. In addition, the online discussions are “a good place for students to inquire about gaps in background knowledge they are missing (CAST, 2011).” Students can participate using written communication or can upload audio or video commentary. Multiple opportunities for discussion has led to higher rates and quality of engagement in the course.

Student Response Systems
A student response system such as the iClicker can help the instructor immediately gauge how well the students are grasping a concept and it increases engagement of the students with the lecture content (Heaslip, Donovan and Cullen, 2014). Using a multiple choice format, the instructor can show a typical multiple choice exam question and have students anonymously click in their answer. If many students miss the answer, the instructor can go over the different responses to clarify the concept. If using a multiple choice exam as part of the evaluation process, giving sample questions similar to the exam to give students practice and a realistic preview of how content knowledge is assessed. With certain functionality enabled, the instructor can see who is struggling with the content and give that student additional support.

**Alternative Format Assessment**

Grade students using many different assessments and projects in order to capture what the students have learned. The different assessment techniques should be aligned with the goals of the course. For many with a learning disability, a multiple-choice exam or essay question is not an adequate measure of ability nor is a traditional paper about what they have learned. There should be greater flexibility in expressing what they have learned. It is recommended to use a combination of activities such as case discussions, projects (written and/or presentation), participation in exercises in addition to typical assessment such as exams that could have some short answer, analysis, multiple choice or essay components. Any exam that includes a video case needs to be closed captioned and available for extended time NCLD (2014) recommends previewing of course material as a useful method to help students to become familiar with the instructions, basic content and structure of the exam. Providing sample exams, case analyses, and term papers or projects online to give students an idea of the expectations of content and quality can greatly reduce anxiety.
Conclusion

It is important to address learning diversity in higher education and specifically for instructors to re-think their teaching methodologies in order to keep pace with the learning needs of students and be inclusive for all. The view that addressing the structure for how content is presented reduces barriers for achievement for many students are who learning disabled. Students with learning disorders already are at risk for course failure than their non-disabled peers (National Center for Educational Statistics, 2014). Not attending to these differences will contribute to the high course failure rate and resulting lower graduation rates. The UDL approach “finds solutions that address the limitations for the learning environment rather than the limitations of the student” (NCLD, 2014). The advantage is that these universal solutions are likely to be useful for many students, not just the learning disabled.
References


