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Technology and Learning: Meeting Special Student's Needs (2010) by David Rose and Jenna Gravel

This article presents basic guidelines for effectively implementing UDL, providing guidelines to compliment each of the three principles: representation, action and expression, and engagement. Importantly, the article also mentions that research and evidence on the applications of UDL are "only in [their] infancy," but are beginning to emerge increasingly. It mentions an important study in which it was discovered that students who read digital texts with embedded supports performed much better on a standardized comprehension test than those students who read the paper text. This has inspired more research of this kind to take place. Technology can have many benefits in the classroom, especially for students with certain disabilities. In talking about the lack of research currently available on UDL, the article also mentions that there are no schools or districts where UDL has been fully put in place, so the essential research needed to assess UDL on a wide scale is not yet achievable. The affects of UDL have yet to be observed on a large scale with more than just the adoption of new technologies and techniques. New research will certainly come about in the next few years as UDL is implemented on a larger scale throughout schools and school boards. There is a lot of progress happening in the development of UDL and a lot of work being done to find hard evidence of its efficacy. The article overall provides great guidelines of the options that should be provided to students in a UDL classroom – and I would like to note the distinction between UDL lessons plans or assessments and an actual UDL classroom.

Representation:

Guideline 1: Provide options for perception – This touches on the importance of presenting information in different ways and through different sensory modalities, like presenting information visually and orally. In terms of technology, it suggests providing information in a way that the student can adjust the format, such as being able to enlarge the text or increase the sound level.

Guideline 2: Provide options for language and symbols – Teachers must be careful when presenting certain vocabulary, images, or graphs, etc. because each student may interpret them differently or be further confused by things they do not recognize. Teachers must provide options for students to get further information for identifying and clarifying such things.

Guideline 3: Provide options for comprehension – Teachers need to not only teach students how to find information, but also how to turn information into "useable knowledge." Students differ greatly in how they process information and integrate it with prior knowledge, so teachers must provide options that give background knowledge or activate students' memory of background knowledge, options that highlight critical ideas and relationships, and options that guide students' processing of information and memorization.

Action and Expression:

Guideline 4: Provide options for physical action – Teachers must provide materials that all students can interact with, unlike a textbook or workbook. Materials must give all students, including those who may be physically disabled, blind, etc. the means to navigate through the material and express what they know.

Guideline 5: Provide options for expressive skills and fluency – Students must be given options for communicating through media and be given the tools they need to be able to compose their work and problem solve. Some students can tell a short story well in speaking, but not in writing. They then need a different option for expressing what they know.

Guideline 6: Provide options for executive functions – Executive functions are what allow humans to overcome impulsive reactions and set, plan for, and modify long-terms goals. UDL attempts to expand students' executive capacity and teachers can do this by providing options that guide effective goal-setting, support planning and strategy development, and facilitate management of resources and information. I wish this guideline had examples to support it! What are some ways to teach students to set goals effectively and plan and strategize?

Engagement:

Guideline 7: Provide options for recruiting interest – Information that does not engage student interest is inaccessible because in the moment, the information goes unnoticed and unprocessed, and in the future, students do not remember the information. Teachers struggle with engaging students because their interests are all different and are always changing. To overcome this, teachers can increase choice and autonomy, reduce distractions, and increase relevance and value, relating material to students' lives.

Guideline 8: Provide options for sustaining effort and persistence – Students differ greatly in their abilities to self-regulate and maintain concentration, whether due to a lack of motivation from the start or a lack of self-regulation skills. To equalize accessibility, teachers can support these students by clearly laying out goals and objectives, give various levels of challenge and support, give options for collaboration and communication, and provide feedback to students.

Guideline 9: Provide options for self-regulation – It is extremely important to help students develop their abilities to regulate their motivations and emotions. Self-regulation is the ability to control ones emotional reactions in order to more effectively engage in an environment, such as a classroom in this case. Many develop these skills on their own or by observing adults, but many also struggle to develop self-regulatory skills. Most classrooms unfortunately only see self-regulatory skills as part of the implicit curriculum and do not address them explicitly, and when they are addressed explicitly, they are addressed in only one manner. Teachers should guide students to develop self-regulatory skills by guiding personal goal-setting and expectations, scaffolding coping skills and strategies, and practicing self-assessment and reflection with students.