Book Review

Michele D. Estes
The University of Georgia
mestes@uga.edu

Rose, D., Meyer, A., and Hitchcock, C. (Eds.) (2005). *The universally designed classroom: Accessible curriculum and digital technologies*. Cambridge, MA: Harvard Education Press. 208 pp. ISBN 1891792636, $29.95 (paperback).

At a time when No Child Left Behind (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEA) 2004 have injected renewed vigor into the debate about inclusive education, Rose, Meyer and Hitchcock have brought us an informative book focused on implementing the principles of Universal Design for Learning (UDL) in a general education setting for all students. They argue that this move has been made increasingly viable by leveraging the power and flexibility of digital technologies. The combined legislation of NCLB and IDEA 2004 require an inclusive curriculum in which all students are held to high expectations and assessed accordingly. In contrast, most public schools currently offer separate curricula for general and special education students. The authors, who are affiliated with the Center for Applied Special Technology (CAST), which has been active in the development of technology in education, state that learning differences in many cases can be overcome through flexible presentation, expression, apprenticeship, and engagement. Various digital technologies afford flexibility that enables teachers to develop theoretically sound activities and empower struggling students to take command of their own learning; however, the authors maintain, technology cannot be the only solution. Hence, CAST constructed the principles of UDL, based on the principles of Universal Design (UD) originating from the field of architecture for the purpose of influencing more usable and inclusive designs of products and environments.

UDL is described by the authors as a framework founded in research and theory "…for applying insights about students in the margins to the design of [flexible] curriculum" (p. 20). One of the hallmarks of UD is that, instead of relying on accommodations and modifications, a universally-designed curriculum is designed up front with the goal of being as accessible as possible to students. Rose, Myer, and Hitchcock argue that in order to aspire to desirable outcomes, each student must have an equal chance to access and learn from existing materials, the most problematic form being print. Students "in the margins" are described as those who struggle to recognize and decode text, who use up strategic resources trying to make sense of print, and who may be negatively affected by requirements involving print material.

Students with special needs stand to benefit most from the principles of UDL, although recent brain research suggests that learners, even those who may be considered within the spectrum of "normal," are very different cognitively. Instead of focusing solely on inherent strengths and weaknesses of a child, UDL researchers examine the interactions of students and their environment to identify barriers and better ways to serve all learners.

Our brains process information in different ways, depending on our level of expertise, by distributing information across and within three main areas of the brain - the recognition, strategic, and affective neural networks. The recognition network receives and analyzes information, the strategic network plans and executes actions, and the affective network coordinates our working and learning (p. 21-22). Having conducted more than 20 years of related research, the authors identify three emerging principles of Universal Design for Learning:

1. To support recognition learning, provide multiple, flexible methods of presentation
2. To support strategic learning, provide multiple, flexible methods of expression and apprenticeship
3. To support affective learning, provide multiple, flexible options for engagement (p. 25)

The authors argue that both the general and special education curricula have evolved but goals, media, materials, instructional methods, and assessments differ in ways that continue to sustain a division within our schools. Challenges of the special education curriculum include diverse, individual student needs, but limitations of the general curriculum include goals and assessments that align to state standards, often confining students to one strategy. For example, students whose English language skills are still developing may have difficulty with traditional print-based texts. Learners with low-incidence disabilities may be challenged for various reasons by traditional materials including lecture and self-directed reading assignments. Simply adopting practices of one existing curriculum or another, the authors stress, will not address the flexibility necessary to reach every student, maximize learning, and facilitate accurate measures of achievement across students. UDL assumes an inclusive lens at the onset of curriculum design.

According to Rose, Meyer and Hitchcock, students with special needs encounter barriers when accessing, being involved, and progressing in a general education curriculum. Barriers include a lack of consistency in the interpretation of "inclusion" as well as difficulties in meeting curricular standards while individualizing the instruction for diverse learners. Assessments can be particularly challenging for learners with print disabilities because measurements of strengths and weaknesses may be confounded by inherent problems such as recognizing, decoding, and using motor skills required for taking traditional assessments. Through universally designed assessments, learners can experience embedded, formative assessments that measure progress (under varying conditions) rather than just outcomes.

The authors explain access to the general education curriculum in terms of the relationship between NCLB and iterations of IDEA. Both NCLB and the 2004 reauthorization of IDEA (termed the IDEA Improvement Act) call for highly qualified teachers, higher expectations for all students, and increased state and district-wide accountability through assessments involving all students if possible. The authors do an effective job of summarizing the relationship between these two acts, at times troubling the implications. Much of NCLB focuses on outcomes through standard assessments, determined by states as a means of generating a report of adequate yearly progress (AYP) for the federal government. Alternate measures of achievement may be used in certain circumstances. Just as students with special needs are required under IDEA 2004 to have access to a free appropriate public education, so too are all learners under NCLB. Should a school not make AYP two years in a row, students may freely transfer to another school that has. Schools that continue to fail to meet AYP are required to take specific actions and finally, to restructure. The authors confess that while underlying accountability is well intentioned, morale may be negatively affected in schools where NCLB

requirements are not met. The authors use IDEA and NCLB to support the notion of a general education curriculum for all, and for the incorporation of technology into the curriculum through highly qualified teachers who participate in professional development activities and receive special services. In addition, one notable outgrowth of IDEA 2004 is the expansion of access via the National Instructional Materials Access Center (NIMAC) that supports states and local school districts with the implementation and use of materials that follow the voluntary National Instructional Materials Accessibility Standard (NIMAS).

Where students with disabilities have been blamed by some for problems resulting from attempts to mainstream, Rose, Meyer and Hitchcock stress that the opportunity now exists to construct a more universally designed curriculum that differs from mainstreaming. This can be achieved by constructing broadly-stated goals, differentiating instruction and building background knowledge; developing an accessible, flexible, and diverse curriculum using graphic organizers and digital technologies such as computer simulations; and by encouraging active participation and implementing more effective measurements of progress through UDL.

The authors propose that teaching become a planned, collaborative activity by design, and they give specific examples of how UDL lesson plans might be developed for best practices in the design of activities within the larger curriculum. They call for further research in related areas to determine how UDL can be used to overcome barriers in the general education curriculum through the investigation of systemic reform through policy change, reach instructional goals and interventions in relation to theories of learning (e.g., Zone of Proximal Development), and provide administrative support as new opportunities are created and collaborative teacher efforts are supported.

Universally Designed Classroom: Accessible Curriculum and Digital Technologies is an easy read for the K-12 practitioner who seeks to improve teaching and learning for all students in the context of one general education curriculum. It contains an introduction by the editors followed by six chapters, each fully summarized and referenced at the end. The book includes information about relevant scientific research, federal and state requirements, and the practice of curriculum design made flexible by digital technologies. Rarely, however, do the authors refer specifically to concepts from the literature of Instructional Design and Technology (cognitive tools or elaboration theory, for example). In chapter 5, the authors do identify several related learning theories appropriate for the design of activities, and also make an effort to discuss supporting in-situ research in greater detail.

This text is written by a host of highly-qualified individuals affiliated with CAST, a group that has made terrific strides in developing digital products such as *Bobby* (2003) and *The Thinking Reader* (2004). This group constructed the UDL framework, making an important contribution to the philosophy and practice of curriculum design. The authors' insights are interesting, relevant to current requirements and technological affordances, and the book is well worth the read.

References

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Thinking Reader. [Computer software]. (2004). Watertown, MA: Tom Snyder Productions.