

Excerpts from:
**Assistive Technology
& Universal Design
for Learning: Two Sides
of the Same Coin**

Over the past decade, evolving technologies have revolutionized the way we do business, communicate, make war, farm, and provide medical treatment. New technologies are also transforming education, and in no domain more dramatically or successfully than in the education of students with disabilities.

Some individuals may see AT and UDL as identical, or conversely, antithetical. We believe that neither view is accurate but instead that AT and UDL, while different, are completely complementary — much like two sides of the same coin. We believe that advances in one approach prompt advances in the other and that this reciprocity will evolve in ways that will maximize their mutual benefits, making it essential that both approaches are pursued vigorously and distinctively. Through a better understanding and melding of AT and UDL, we believe that the lives of individuals with disabilities will ultimately be improved.

Integration of Assistive Technology and Universal Design for Learning in the Classroom. Consider the problem for a student with a reading disability of mastering a history concept. Most history curricula pose significant barriers to such a student, especially the predominance of text. Most of the content is presented in text, and most of the assessment requires writing.

This problem, too, can be viewed and solved in two different ways. Taking an AT perspective, the problem can be considered an individual problem—it is clearly the individual student's reading disability that interferes with his or her ability to master the history content and demonstrate knowledge.

This view fosters solutions that address the individual's weaknesses—remedial reading classes, special tutoring, and AT, for example. Of these, AT is particularly valuable because it provides independent means for the student to overcome his or her limitations by, for example using a spellchecker or audio version of the history book.

A UDL perspective, on the other hand, sees the problem as an environmental problem—the history curriculum's over reliance on printed text raises barriers to engagement and mastery for many students. This view fosters solutions targeting limitations in the curriculum rather than limitations in the student.

Rose, David & Hasselbring, Ted & Stahl, Skip & Zabala, Joy. (2005). Assistive Technology and Universal Design for Learning: Two Sides of the Same Coin Two Roles for Technology: Assistive Technology and Universal Design for Learning.

Imagine a multimedia curriculum that provides digital, universally designed media that offer diverse options for viewing and manipulating content and expressing knowledge. Within such a flexible curriculum fewer students face barriers; digital text can speak aloud to reduce decoding barriers for students with dyslexia; digital images or video provide an alternative representation that reduces barriers in comprehension for students with language-based disabilities while providing descriptions and captions for students who are blind or deaf; and keyboard alternatives may reduce barriers in navigation and control for students with physical disabilities.

These UDL solutions have the advantage of enhancing learning for many different kinds of students (Rose & Meyer, 2002).

In reality, both kinds of solutions are needed (Hitchcock & Stahl, 2003). In an educational setting, the disadvantage of exclusively using AT is that it is not integrated with the learning goals of a given lesson. If that is the case, AT may not be helpful, or may even interfere, from an educational standpoint.

At the same time, a purely UDL solution has the disadvantage that some built-in accommodations, particularly for students with low-incidence disabilities, are cumbersome, inefficient, or prohibitively expensive when included as an element of the basic curriculum.