

## Kurzweil 3000 Supports Universal Design for Learning

### What is Universal Design?

The Center for Universal Design at North Carolina State University, which has taken a leadership role in the promotion of Universal Design (UD), defines universal design as “the design of products and environments to be used by all people, to the greatest extent possible, without the need for adaptation or specialized design.” The concept of UD was first applied to architecture and has since become a motivating principle in the arts, health care, and education.

One of the earliest examples of UD is the sidewalk curb cut. Initially designed to improve access for people in wheel chairs, creative uses of curb cuts continue to multiply. Today cyclists, skateboarders, and people wheeling strollers and shopping carts are among the many who appreciate the convenience they offer. Curb cuts are also an excellent example of an important premise of universal design — when adaptability is built into a design, people will find numerous uses for it.

### What is Universal Design for Learning?

The term Universal Design for Learning (UDL) was coined by CAST (Center for Applied Special Technology) in 1999. CAST found that the principles of Universal Design in architecture and product development could be applied to developing useful educational tools. “Universal” does not mean a single solution that is ideal for everyone. As articulated in *Teaching Every Student in the Digital Age*, UDL provides “a blueprint for creating flexible goals, methods, materials, and assessments that accommodate learner differences.”

UDL is a natural extension of the current work in neuroscience that says each brain processes information differently. CAST’s research identified three primary networks that impact learning. The neural network deals with incoming stimuli and affects “what” students learn. The strategic network mediates how students process incoming information based on such things as past experience or background knowledge. The affective network regulates students’ attitudes and feelings about incoming information as well as their motivation to engage in specific activities. Successful teaching and learning involves addressing all three networks simultaneously.

Based on these three networks, CAST cites three principles of UDL:

- *Multiple means of representation* - to give learners various ways of acquiring information and knowledge.
- *Multiple means of expression* - to provide learners alternatives for demonstrating what they know.
- *Multiple means of engagement* - to tap into learners’ interests, offer appropriate challenges, and increase motivation.

### Applying UDL Principles in the Classroom

Since it’s impossible to predict what combination of strengths and weaknesses any particular student will possess, materials in the classroom need to be flexible enough to accommodate students with wide differences in how they access, process or interpret information. UDL makes a clear case for the use of new technologies in the classroom to ensure academic achievement for all students.

These new insights are having a profound effect on classroom practices and are affecting both methods of instruction as well as the selection of educational materials. However, text-based materials continue to dominate the classroom. By their nature, they present information in a single format that has proven to be limiting for many students. Rather than creating special accommodations for struggling students as an afterthought, UDL advocates encourage educators to seek out tools that students of all abilities can use. Letting students use these tools to learn and take the same tests as their peers allows students to become truly independent and more confident.

### UDL and Test Taking

Test taking is one of the primary areas where UDL is being actively applied. While many UDL considerations relate to the design of the test itself (e.g., wording, sentence structure, etc.), there has been a growing concern that students with learning differences are being evaluated on their ability to read or process test instructions rather than on what they know in a given subject area. Therefore, steps must be taken to ensure that all students are being tested on a level playing field.

### Kurzweil 3000 Supports UDL

Kurzweil 3000, developed by Kurzweil Educational Systems, is reading, writing and learning software for struggling students. Widely recognized as the most comprehensive and integrated solution for addressing language and literacy difficulties, Kurzweil 3000 embraces and supports the concept of UDL by making print and electronic material available to a broad spectrum of students. The software uses a multi-sensory approach — presenting print or electronic text on the computer screen with added visual and auditory accessibility. It incorporates a host of dynamic features, including powerful decoding, study skills and test taking tools, designed to adapt to each individual’s learning style and promote active learning. For students who have difficulty physically accessing curriculum materials, it provides a digital means of engaging with text and supports students who use alternative methods for accessing the computer.

UDL advocates the design of products that are usable by all students to the greatest extent possible without the need for further adaptation. Kurzweil 3000 enables schools to convert text materials, including classroom and standardized tests, into a format that provides the range of accommodations most students need to access curricular materials successfully.

*“Kurzweil 3000 has allowed our students with disabilities to access the regular education curriculum. The software’s versatility allows us as a school district to meet a variety of students’ learning needs using just one program, regardless of the grade level or curriculum area.”*

**Elisa Wern, Assistive Technology Specialist**  
Alachua County Public Schools, Gainesville, Florida

## How Kurzweil 3000 Supports the Principles of Universal Design for Learning

### **Multiple means of representation (i.e., neural network support)**

**Kurzweil 3000** provides the scaffolding needed for struggling students to access the general education curriculum. Kurzweil 3000 can access text from a variety of sources including printed material, electronic files, or the internet. Visual highlighting helps students track text as it is read aloud. With Kurzweil 3000, students and teachers are offered a wide variety of options to present information in more manageable ways.

Using Kurzweil 3000, students can:

- Change text size or color for greater visibility.
- Enlarge the entire text, magnify individual words or format text materials to isolate specific text.
- Choose the amount of text to be read aloud at any one time.
- Change the reading speed or voice or turn the voice off and silently read the highlighted text.
- Easily access a range of audible reference tools while reading including a choice of dictionaries, a thesaurus and spelling and syllabification tools.
- Use foreign language and pictorial dictionaries to provide support for English language learning.
- Create audio files to make materials accessible on portable audio players so they can listen wherever they go.

Using Kurzweil 3000, teachers can:

- Personalize instruction to suit student needs and learning styles using Sticky, Text or, Voice Notes or Footnotes.
- Use Bubble Notes, which appear automatically when reading a document, to teach specific skills, guide students through tasks, or gauge reading comprehension by inserting pre-, post- and during-reading questions.
- Provide tests in digital format to allow independent access for students with learning differences.
- Enable or disable program features for tests depending on the needs of the student and test requirements.

### **Multiple means of expression (i.e., strategic network support)**

**Kurzweil 3000** provides multiple, flexible ways for students to demonstrate what they know. Digital technology offers students varied means of expression and greater tolerance for making and correcting mistakes.

Using Kurzweil 3000, students can:

- Type or dictate text, create audio notes, highlight text, or drag and drop text within or between documents to answer test questions, write reports, or complete worksheets.
- Organize information by creating study notes and using digital highlighters.
- Easily extract highlighted text or notes into a separate document to create an outline or study guide.
- Create bookmarks to access designated sections of text with a click of a mouse.
- Use keyboard equivalents to access most Kurzweil 3000 menu options.
- Easily reread blocks of text, test instructions or questions as many times as needed to ensure comprehension.
- Proofread their work by hearing test answers and written work read back.
- Edit work using audible spell check.
- Facilitate writing using word prediction, customized vocabulary lists and the online thesaurus.

Kurzweil 3000 is compatible with a number of third-party assistive technology tools for students who require diverse means of expression and/or alternative access to the computer. Compatible products include:

- Dragon Naturally Speaking from ScanSoft.
- The Discover product line from Madentec.
- Intellikeys® from Intellitools®.
- Inspiration® from Inspiration Software.
- AAC Devices including those from the Prentke Romich Company and Dynavox Technologies.

### **Multiple means of engagement (i.e., affective network support)**

**Kurzweil 3000** is content independent. Therefore, it can be used across curriculum areas by students of different ages and abilities. It provides students with access to books at their interest level but beyond their independent reading level.

The active learning and study strategies available with Kurzweil 3000 allow students to be more engaged in the learning process. Teachers can use many of the same tools to provide support and words of encouragement in written or audio notes.

By offering students a broad menu of supports, Kurzweil 3000 facilitates comprehension and eases frustration. Because Kurzweil 3000 eases the strain of reading and writing, it also reduces stress and fatigue. When students can manage tasks that once were arduous, tiring, or extremely time consuming, they develop a more positive attitude toward their work, gain independence, and get the maximum benefit for their efforts. The success they experience using Kurzweil 3000 helps increase motivation and turn them into life-long learners.



**Kurzweil Educational Systems**

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