



An Annotated Review of Current Research Supporting the Use of Kurzweil 3000 in Higher Education



Kurzweil
EDUCATIONAL SYSTEMS

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Table of Contents

Introduction	1
Reading	
Statement of Problem	2
Table of Research	3
Kurzweil 3000 features that support reading comprehension	5
Vocabulary	
Statement of Problem	6
Table of Research	7
Kurzweil 3000 features that support vocabulary instruction	7
Writing	
Statement of Problem	8
Table of Research	8
Kurzweil 3000 features that support writing instruction	8
Study Skills	
Statement of Problem	9
Table of Research	9
Kurzweil 3000 features that support study skills instruction	9
Test Taking	
Statement of Problem	10
Table of Research	10
Kurzweil 3000 features that support test taking	11
About the Authors	12
About Kurzweil Educational Systems	13

Introduction

Students with disabilities in postsecondary education

About 9 percent of all undergraduates, amounting to 1.3 million students in higher education, report having a disability. This is a noteworthy percentage as it has tripled in the last two decades. More than half of the students with disabilities that enroll in higher education are at risk for failure (National Council on Disability, 2003). Subsequently, only 28% of students with disabilities enrolled in 4-year college programs will earn a diploma as compared to 54 percent of their peers without disabilities (Institute for Higher Education Policy, 2004).

Students with disabilities may be less likely to participate in general education academic classes than their non-disabled peers prior to entering college. Therefore, they may enter postsecondary education underprepared for the rigorous reading, writing, and math requirements of college. As we think about ways to assist our struggling learners, it may help us to consider some of the ways that high school and college are different from one another. Below is a chart that compares the academic expectations in high school and college (Brinkerhoff, Shaw, & McGuire, 1993).

What are the main differences between high school and college?

Academic Expectations in High School and College	
High School	College
Class Time: 6 hours per day, 180 days per year, 1,080 HOURS TOTAL	Class Time: 12 hours per week, 28 weeks per year, 336 HOURS TOTAL
Study Time: 1-2 hours per day; 270 HOURS TOTAL	Study Time: Rule of thumb = 2 hours, per 1 hour of class, approx. 3-4 hours per day; 490 HOURS TOTAL
Tests: Weekly, at end of chapter, frequent quizzes and tests	Tests: 2-4 per semester; at end of multiple chapters
Grades: Passing grades guarantees you a seat, no matter what	Grades: C or above to get into upper division college
Teachers: Take attendance, check notebooks, impart knowledge and facts	Teachers: Lecture, challenge you to think, require research
Freedom: Your day is structured ; limits set by parents, teachers, and other adults	Freedom: All they can handle! Biggest decision of day, "Should I go to class?" or "Should I sleep 4, 5, 6 or 10 hours?"

Students with disabilities in postsecondary education

According to the 2000 U.S. Census, almost 50 million people (or approximately 19 percent of all Americans over age five) reported having a disability.

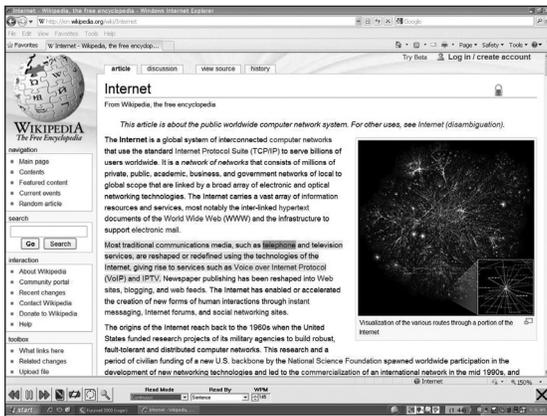
Statistics to consider:

- Only 1 in 10 high school students with learning disabilities attend 4 year colleges (NLTS-2, 2005)
- 3-5% of students enrolled in college have a learning disability (Gregg, 2011)
- About 9 percent of all undergraduates in higher education report having a disability,
 - A percentage that has tripled in the last two decades,
 - This amounts to about 1.3 million students
- 73% of students with disabilities enroll in higher education,
 - Compared to 84% of their peers without disabilities.
 - More than half of students with disabilities that enroll in higher education are at risk for failure (National Council on Disability, 2003)

- But, only 28% achieve diplomas in 4-year, public institutions
 - Compared to 54 percent (almost twice) their peers without disabilities. (Institute for Higher Education Policy, 2004)
- 70% of at-risk students who take 1 or more remedial classes in college do not obtain a degree or certificate within 8 years of enrollment (Kuhn et al., 2005)
- According to Soldier to Student (2012) 86.3% of veterans at 4 year public colleges and 87.9% of veterans at 2 year public colleges “sometimes” or “often” seek academic support/tutoring.

Kurzweil 3000 can be used to address the needs of postsecondary students. It should be the goal of all postsecondary educators to equip students with disabilities with the tools they need to meet the academic expectations set forth for all students. Postsecondary educators need to become fluent in the tools and methods that will help their students experience academic success in college (Gregg, 2007). This report provides an overview of research that supports the use of Kurzweil 3000 as an academic accommodation for students with disabilities in postsecondary school settings. Specifically, this paper will provide a review of research and address how Kurzweil 3000 can assist students in the following areas:

- reading
- vocabulary
- writing
- study skills
- test taking skills



Reading: Statement of the problem

According to Lyon (2002) only 2% of students who receive remedial education or special education services for difficulties learning to read will complete a four-year college program. Students with disabilities enrolled in college have significantly lower literacy skills than their non-disabled peers (NLTS-2, 2005).

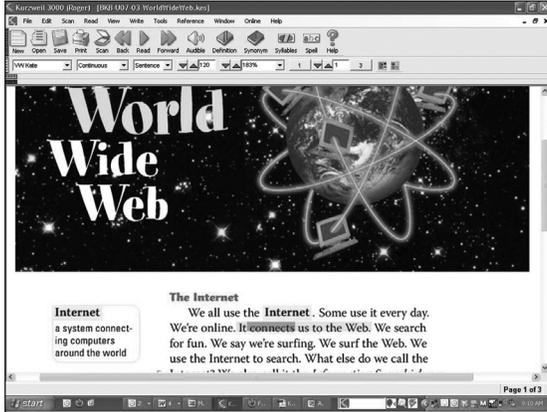
The National Reading Panel (2000) and their findings helped shape American education as it pertained to the five areas of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) in grades K-2. Later Biancarosa and Snow (2004) expanded the work of the National Reading Panel and extended it into the area of secondary education in their document Reading Next. In Reading Next, Biancarosa and Snow reported on Fifteen Elements of Effective Adolescent Literacy Instruction which included technology, effective instructional principles embedded in content areas, strategic tutoring, and others.

Brinckerhoff and Banerjee writing for the Association on Higher Education and Disability (2011) discuss areas where students with learning disabilities may experience reading difficulties.

These areas are:

- Phonics and phonological awareness
- Adjusting reading rate based on difficulty/complexity of text
- Understanding the difference between main idea and supporting details
- Synthesizing information from multiple sources
- Maintaining reading endurance
- Reading aloud in class
- Knowing how and when to use reading strategies
- Following written instruction comprised of multiple steps
- Completing all assigned readings for all classes in a timely manner

Table of Research		
Author	Title	Full Citation
Biancarosa & Snow	Reading Next	Biancarosa, C., & Snow, C. E. (2004). Reading next- A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York (2nd ed.). Washington, DC: Alliance for Excellent Education.
Brinckerhoff & Banerjee	College Students with Learning Disabilities	Brinckerhoff, L.C., & Banerjee, M. (2011). <i>College Students with Learning Disabilities</i> . Association on Higher Education And Disability.
Lyon	Why reading is not a natural process	Lyon (2002) . Why reading is not a natural process. Retrieved from http://dyslexia-ncbida.org/articles
National Reading Panel	Teaching Children to Read: An Evidenced-based Assessment of the Scientific Research Literature and its Implications for Reading Instruction	National Reading Panel (2000). <i>Teaching Children to Read: An Evidenced-based Assessment of the Scientific Research Literature and its Implications for Reading Instruction</i> . Washington, DC: National Institute of Child Health and Human Development
NLTS-2	<i>Changes Over Time in the Early Postschool Outcomes of Youth with Disabilities. A Report of Findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2</i>	Wagner, M., Newman, L., Cameto, R., and Levine, P. (2005). <i>Changes Over Time in the Early Postschool Outcomes of Youth with Disabilities. A Report of Findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Transition Study-2 (NLTS2)</i> . Menlo Park, CA: SRI International. Available at www.nlts2.org/reports/2005_06/nlts2_report_2005_06_complete.pdf .



Reading Comprehension: Statement of the Problem

As students transition from elementary school to secondary school and from secondary school to postsecondary there exists a shift in the purpose for reading. In elementary school students were *learning to read* whereas beyond the elementary years students are *reading to learn*. As students age, reading to learn is often done with textbooks that may be written above the students reading ability, they may contain information that students have never read about before, and these texts may lack a clear organization (Gajiria et al., 2007).

Understanding what a learner knows about a topic *before* they begin reading can greatly impact the amount of learning that can take place. Since texts are not fully explicit, readers must draw from their life experiences to understand it (Braunger & Lewis, 2006). Teachers therefore must understand what students already know so that they may build upon this prior knowledge with new knowledge.

In addition to background knowledge, providing readers with a clear purpose for reading helps them focus their attention and help them remember what was read (Fisher, Frey, & Lewis, 2009). Having this clear purpose for reading (enjoyment, retelling, answering questions or learning new information) increases a student's ability to focus on the text and learn from it. Different purposes require different reading skills (University of Michigan, 2012).

According to Gabriel (2008), at-risk or struggling learners in higher education face two major obstacles:

- a) Lack of study strategies (which will be covered later in this paper) , and
- b) Not being able to differentiate between essential and non-essential information.

Some of the ways that we can help students make this determination between essential and non-essential information are:

- Setting a clear and explicit purpose for their reading (e.g., read this chapter to determine the 3 causes of the Russian Revolution);
 - Teaching students how to mark up the text by highlighting, margin notes, and sticky notes, (remember that in high school students are generally **not permitted** to write in their textbooks);
 - Explaining how to summarize the text in your own words (paragraph by paragraph or section by section);
 - Encouraging students to draw pictures, create graphic organizers, or create mental images to help them remember; and
 - Asking questions as they read.
- (University of Michigan Study Strategies Series, 2012).

To improve comprehension teachers should provide students with explicit instructions on how to extract meaning from text and the strategies that may aid this process (Gajiria et al., 2007). Providing students with advanced organizers, visual displays of text, outlines, guided notes, and self-questioning techniques can aid in comprehension. After students have read they should be encouraged to create concept maps, or fill out charts or matrices, or outline the selection.

Table of Research		
Author	Title	Full Citation
Braunger & Lewis	Building a knowledge base in reading	Braunger, J., & Lewis, J. P. (2006). Acquiring and Developing Literacy: Basic Understandings. In J. Braunger & J.P. Lewis (Eds.), <i>Building a Knowledge Base in Reading</i> (p. 60). Newark, DE: IRA
Fisher, Frey & Lewis	Comprehension is more than a strategy	Fisher, D., Frey, N, & Ross, D. (2009). Comprehension is more than a strategy. In K.D. Wood & W. E. Blanton (Eds.) <i>Literacy Instruction for Adolescents</i> (p. 328-343). New York, NY: The Guilford Press.
Gabriel	Teaching Unprepared Students	Gabriel, K. F. (2008). <i>Teaching Unprepared Students Strategies for Promoting Success and Retention I Higher Education</i> . Sterling, VA: Stylus.
Gajiria, Jintendra, Sood, & Sacks	Improving comprehension of expository text in students with LD: A research synthesis	Gajiria, M., Jintendra, A. K., Sood, S., & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. <i>Journal of Learning Disabilities</i> , 40(3), 210-225.
University of Michigan	Reading for College	University of Michigan Study Strategies Series (2012). <i>Reading for College</i> , Retrieved from University of Michigan website, http://www.umich.edu/~lstudy/reading.html/

Kurzweil 3000 Features that Support Learners

Prior to beginning reading, postsecondary students can use Kurzweil 3000 to prepare their minds for reading by:

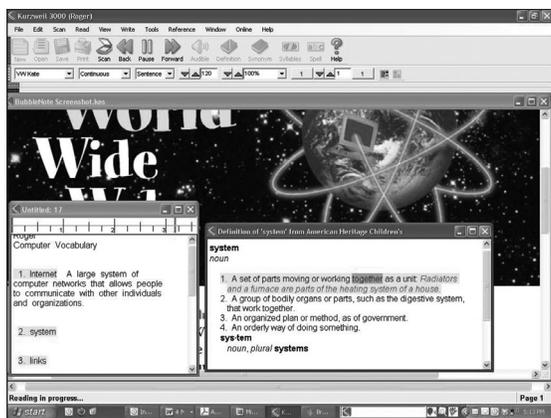
- Activating and building background knowledge by Quick access to the Internet with Kurzweil 3000
- Create a purpose for reading by using sticky notes or voice notes based on syllabi requirements or instructions from their professor

By providing auditory and visual access to text, Kurzweil 3000 allows struggling postsecondary readers to focus on understanding the text. A number of Kurzweil 3000 features further facilitate comprehension. For example, students can:

- Take notes in the margin to restate an idea or to insert additional information
- Drag and drop text from other documents into margin notes or footnotes
- Generate questions in the form of notes which can be extracted into a separate outline
- Highlight critical information using up to six colors
- Create outlines or flash cards from highlighted text
- Instantly locate specific sections of the text
- Make multiple passes through a document to check for different things
- Open both the original document and a text document at the same time, so they can refer to the original while answering questions or summarizing

Following this further, given the large volume of text postsecondary students are expected to read, effective note-taking is critical to digesting and summarizing essential information from non-essential information for easy reference when writing papers or studying for exams. A number of Kurzweil 3000 features facilitate the note-taking process including:

- Use of text or sticky notes to jot down information while reading
- Ability to drag and drop text into a text or sticky note
- Use of notes to generate questions that can later be converted into a separate document (this can be done by the teacher as well and used as a study guide by the student)
- Highlight critical information to turn into an outline for further study
- Voice notes to enable students to express more complex ideas in their own words



Vocabulary: Statement of the Problem

As students advance educationally, both the length of text and the amount of knowledge that they are expected to learn from these texts and from in class lectures increases exponentially. Often the vocabulary that students encounter at the college level can also cause students to struggle. According to Gabriel (2008), students' vocabulary deficiencies can negatively impact a student's ability to learn information in class as well as during independent reading/study time. If a student cannot understand what is being said in a lecture, or what they are reading in their assigned text they may become disengaged from the course.

Textbooks (especially at the postsecondary level) are full of polysyllabic, low-frequency words which convey much of the texts meaning (Cunningham, 2009). Because of this, if a student doesn't understand these *big words* then they may not be able to comprehend the text. According to Fang and Schleppegrell (2008), "Advanced disciplinary knowledge requires specialized language, as complex meanings cannot be conveyed with precision in everyday language." (p. 4)

Harmon, Wood, and Medina (2008), reviewed 25 years of vocabulary research and noted eight key understanding that are essential in vocabulary instruction (p. 350), they are:

- Vocabulary learning is closely tied to conceptual understanding.
- Explicit instruction in content-area vocabulary builds and supports conceptual understanding.
- Explicit instruction involves multiple, varied, and meaningful experiences with words.
- Vocabulary learning occurs implicitly in content-area classrooms.
- The structure of expository texts impact vocabulary learning.
- Classroom instructional time for learning vocabulary is necessary and must be sufficient.
- Metacognitive awareness of vocabulary learning fosters independent learning in the different areas.
- Different content-area words require different forms of instruction.

Willingham and Price (2009) emphasize that postsecondary students need to be taught self-learning strategies that allow them to continue learning after they leave the classroom. The word learning strategies that are supported in the research are dictionary strategies that move beyond simply copying the definition, morphology instruction in which students learn a certain number of suffixes, prefixes, and bases of the discipline that they are studying, and mnemonics (using pictures, drawings, or mental visualizations).

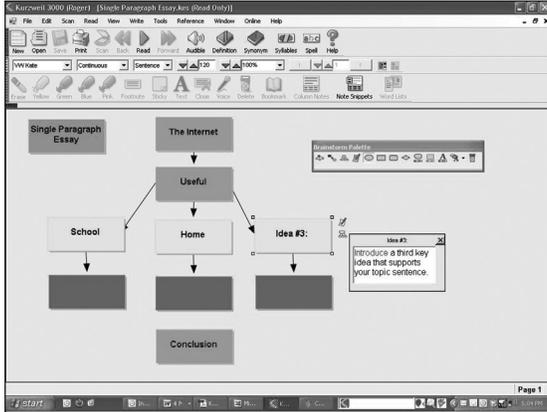
Harmon, Wood, and Medina (2008), summarize the importance of vocabulary instruction in the following way, "Students, especially those who struggle with reading, need teachers who use effective instructional techniques for introducing, contextualizing, connecting, demonstrating, and applying word meanings. Furthermore, students deserve explicit instruction in independent word-learning strategies that are useful for unlocking word meanings across different subject matter areas." (p. 352).

Table of Research		
Author	Title	Full Citation
Cunningham	Polysyllabic Words and Struggling Adolescent Readers	Cunningham, P. M. (2009). Polysyllabic Words and Struggling Adolescent Readers. In K. D. Wood & W. E. Blanton (Eds.) <i>Literacy Instruction for Adolescents Research Based Practice</i> (p. 307-327). New York, NY: The Guilford Press.
Fang & Schleppegrell	Reading in Secondary Content Areas: A Language Based Pedagogy	Fang, Z., & Schleppegrell, M., J. (2008). <i>Reading in Secondary Content Areas: A Language Based Pedagogy</i> . Ann Arbor, MI: The University of Michigan Press.
Gabriel	Teaching Unprepared Students	Gabriel, K. F. (2008). <i>Teaching Unprepared Students Strategies for Promoting Success and Retention I Higher Education</i> . Sterling, VA: Stylus.
Harmon, Wood, & Medina	Vocabulary Learning in Content Areas	Harmon, J. M., Wood, K. D., & Medina, A. L., (2009). Vocabulary Learning in the Content Areas. In K. D. Wood & W. E. Blanton (Eds.) <i>Literacy Instruction for Adolescents Research Based Practice</i> (p. 344-367). New York, NY: The Guilford Press.
Willingham & Price	Theory to Practice: Vocabulary Instruction in Community College Developmental Education Reading Classes: What the Research Tells Us	Willingham, D. & Price, D. (2009). Theory to Practice: Vocabulary Instruction in Community College Developmental Education Reading Classes: What the Research Tells Us. <i>Journal of College Reading and Learning</i> , 40(1), 91-105.

Kurzweil 3000 Features to Support Learners and Vocabulary Instruction

Kurzweil 3000 is an ideal tool for helping postsecondary learners develop a stronger vocabulary. Students can gain a greater understanding of multi-syllabic, low frequency words by being able to hear and read them in context. They can look up unfamiliar words as they read, highlight words for future reference and create vocabulary lists organized by topic or attribute. Kurzweil 3000 features that help strengthen vocabulary include:

- Access to a variety of audible dictionaries including standard and collegiate English dictionaries (users can also look up words within a definition if needed)
- Easy access to picture dictionaries (if applicable to content area)
- Vocabulary lists of homophones and easily confused words (teachers or students can also create their own vocabulary lists for quick reference)
- A thesaurus to generate a list of synonyms
- A syllable tool which gives the syllabification of words, parts of speech, roots, prefixes and/or suffixes as well as the correct pronunciation



Writing: Statement of the Problem

Writing requires the ability to link language, motor skills and thought (Mather & Urso, 2011). College students need to be able to write legibly (or keyboard correctly), translate thought into words, spell correctly, analyze and synthesize concepts, and express complex ideas clearly and with in acceptable formats (e.g. APA or MLA). If students have problems any one of those areas the process of writing may be difficult.

According to Fletcher, Lyon, Fuchs, & Barnes (2007) students may have difficulties with “generation” or “transcription”. Generation occurs when the writer translates ideas into language that represents those ideas. These ideas must be organized, stored, and retrieved from the writer’s memory. Transcription involves the process of making letters (or choosing a key to represent the letter) and spelling. These two things are necessary if the writer is to convey the intended meaning to the reader.

Students with learning disabilities at the college level may experience problems, or experience issues with the following writing skills:

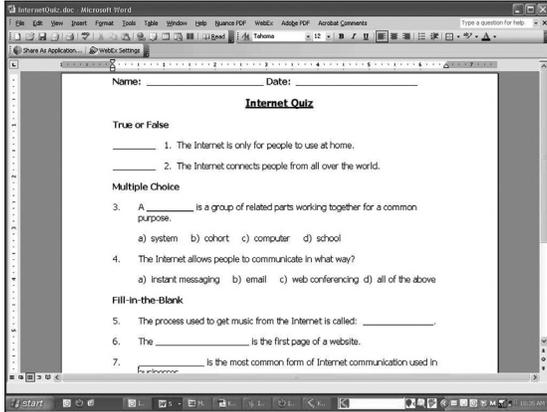
- Getting started/planning writing;
 - Writing works that meet the length requirements set forth by professors;
 - Using over simplistic vocabulary;
 - Spelling errors that include omissions, substitutions, and transpositions;
 - A tendency to write simple sentences that do not contain the appropriate syntax, semantics, and sentence structure for the course content;
 - Lack of editing; and
 - Meeting course deadlines.
- Brinckerhoff & Banerjee (2011)

Table of Research		
Author	Title	Full Citation
Brinckerhoff & Banerjee	College Students with Learning Disabilities	Brinckerhoff, L.C., & Banerjee, M. (2011). <i>College Students with Learning Disabilities</i> . Association on Higher Education And Disability.
Mather & Urso	Assessment of Academic Achievement	Mather, N. & Urso, A. (2011). Assessment of Academic Achievement. In S. Goldstein, J.A. Naglieri, & M. DeVries (Eds.), <i>Learning and Attention Disorders in Adolescence and Adulthood Assessment and Treatment</i> (p. 161-187). Hoboken, NJ: Wiley.
Fletcher, Lyon, Fuchs, & Barnes	Written Expression Disabilities	Fletcher, J. M., Lyon, G. R., Fuchs, L. S. & Barnes, M. A. (2007). Written Expression Disabilities. In J. M. Fletcher, G. R. Lyon, L. S. Fuchs, & M. A. Barnes (Eds.). <i>Learning Disabilities From Identification to Intervention</i> . (p. 236- 259). New York, NY: The Guilford Press.

Kurzweil 3000 Features to Support Learners and Writing

Postsecondary students are typically required to demonstrate their mastery of the content via written research papers and exams. A number of Kurzweil 3000 features make it easier to compose, edit and proofread written work including:

- Brainstorming ideas
- Converting highlighted text into an outline as a starting point for writing
- Using the spelling tool, dictionary, or word prediction tool as needed
- Auditory reading of written text so students can proofread for content and spelling.



Test Taking: Statement of the Problem

Test taking skills are essential for success in postsecondary coursework. Students with LD are more likely than their nondisabled peers to have deficits in test taking skills at the postsecondary level (Skinner & Lindstrom, 2003). Furthermore, even if students with LD utilize good study skills during test preparation, their knowledge may not translate without the use of test taking skills (Holzer, Madaus, Bray, & Kehle, 2009). Strategies that students with LD typically use less than their nondisabled peers include:

- Eliminating incorrect options;
 - Locating synonyms;
 - Using reasoning to select answers;
 - Techniques for making educated guesses;
 - Writing essay questions;
 - Following instructions;
 - Processing speed; and
 - Managing distractions and other sensory issues in the room.
- (Scruggs & Mastropieri, 1988; Wolf, Thierfeld-Brown, & Bork, 2009).

Students need to be prepared to know which strategies to use for the variety of test formats they will encounter at the postsecondary level (Shaw, Madaus, & Duke, 2009).

Table of Research

Author	Title	Full Citation
Holzer, Madaus, Bray, & Kehle	The test-taking strategy intervention for college students with learning disabilities	Holzer, M. L., Madaus, J. W., Bray, M. A., & Kehle, T. J. (2009). The test-taking strategy intervention for college students with learning disabilities. <i>Learning Disabilities Research & Practice</i> , 24, 44-56.
Scruggs & Mastropieri	Are learning disabled students "test-wise"? A review of the recent research.	Scruggs, T. E. & Mastropieri, M. (1988). Are learning disabled students "test-wise"? A review of the recent research. <i>Learning Disabilities Focus</i> , 3, 87-97.
Shaw, Madaus, & Duke	Preparing students with disabilities for college success: A practical guide to transition planning	Shaw, S. F., Madaus, J. W., & Dukes, L. L. (2009) Preparing students with disabilities for college success: A practical guide to transition planning.
Skinner & Lindstrum	Bridging the gap between high school and college: Strategies for the successful transition of students with learning disabilities	Skinner, M. E. & Lindstrum B. D. (2003). Bridging the gap between high school and college: Strategies for the successful transition of students with learning disabilities. <i>Preventing School Failure: Alternative Education for Children and Youth</i> , 47, 132-137.
Wolf, Thierfeld-Brown, & Bork	Students with Asperger syndrome: A guide for college personnel.	Wolf, L. E., Brown, J. T., & Bork, G. R. K. (2009) Students with Asperger syndrome: A guide for college personnel.

Kurzweil 3000 Features to Support Learners and Test Taking

Kurzweil 3000 supports test-taking strategies for postsecondary students through:

- Electronic practice with fill-in-the-blank, multiple choice, true/false, short answer, and essay questions.
- Auditory reading of the instructions as many times as needed.
- Auditory reading of the question and answer to check answers.
- Access to supports such as dictionary and thesaurus as the testing situation allows.
- Teachers' insertion of notes, reminders, or instructions into a document to remind students of the test-taking strategy as permitted.
- Answering fill-in-the-blank, multiple choice, true/false, short answer and essay questions electronically
- Practicing using different test formats

In Conclusion

Recent regulatory changes in K-12 education policy and improved medical treatment have led to an increase in the number of students with disabilities entering into higher education. Now more than ever, it is imperative that personnel and students are equipped with the tools and resources necessary to ensure student success at the postsecondary level.

Students with disabilities may benefit from the supports offered by Kurzweil 3000. The supports offered by Kurzweil 3000 can make a significant difference in the academic outcomes of students with disabilities at the postsecondary level. Reading, vocabulary and writing skills are all prerequisite skills for success at the college level and are directly supported by Kurzweil 3000. In addition, students must possess both study skills and test taking skills in order to demonstrate their knowledge. Technology like Kurzweil 3000 can make a significant difference in supporting the development of these skills, as well as providing meaningful access to curriculum materials.

Kurzweil 3000 helps learners to actively engage in the learning process and take ownership of the higher education experience.

About the Authors

Mary Anne Steinberg Ph.D.

Mary Anne Steinberg Ph.D. has over twenty years of experience in general and special education. Mary Anne taught for over ten years in Levy County, Florida. In 1994 she co-implemented the first full inclusion classroom in Levy County, later she became the reading coach at her school. Mary Anne left classroom teaching to work for the Area Center for Educational Enhancement (ACEE), funded through a grant from the Florida Department of Education. At ACEE Mary Anne worked with teachers and administrators in twenty-one school districts in northeast Florida, providing professional development in reading, Language Arts, the Sunshine State Standards, and the FCAT. During the 2003 school year, Mary Anne began working for another Florida Department of Education program, the Florida Diagnostic and Learning Resource System, where she worked closely with special education teachers, parents, and administrators on ways to improve literacy education for students with special needs. In 2008, Mary Anne returned to the University of Florida full time to pursue her Ph.D. in Special Education with a specialization in reading. During her time at the University of Florida, she concentrated her efforts in literacy for adolescents, as well as students with disabilities in higher education, working with adjudicated youths, and technology. She is currently working at the University of Florida as a professor where she is the coordinator for and teaches courses for the PLuS graduate certificate program. This certificate program is for professionals who work with students with disabilities at the postsecondary level.

Kristin M. Murphy, M.S., Ed.M.

Kristin M. Murphy has ten years of experience in Special Education for adolescents in varied teaching, research, and policy roles. She worked for the New York City Department of Education for five years, first as a Special Education teacher and then on No Child Left Behind related operations and dissemination that pertained to students with disabilities. She currently serves as a researcher on two different federal research grants funded by the U.S. Department of Education's Institute of Education Sciences. Additionally, she teaches coursework about inclusive teaching strategies and has assisted in the development of a teacher quality seminar for graduate students at the University of Florida. She has published about teacher preparation and professional development in Special Education in *Teacher Education and Special Education* and *Focus on Exceptional Children*. She holds a Bachelor's degree in Psychology from Ithaca College, a Master's degree in Risk and Prevention Research from Harvard University, and is currently a Ph.D. Candidate in Special Education at the University of Florida.

About Kurzweil Educational Systems

About Kurzweil Educational Systems

Kurzweil Educational Systems® is a leader in assistive technology, text-to-speech software and literacy solutions, serving the needs of the nation's most challenged students, including individuals with special needs and learning difficulties, such as dyslexia, attention deficit disorder or those who are English Language Learners. Driven by the vision to serve the needs of the nation's most challenged learners, and enabling students to reach their full potential, Kurzweil Educational Systems provides complete reading, study skill, and writing support for students and adults with academic challenges and reading support for those who are blind or visually impaired. Kurzweil Educational Systems is part of the Cambium Learning Technologies group. www.kurzweiledu.com.

About Cambium Learning Technologies

Cambium Learning Technologies designs and publishes instructional technology for students in general and special education ranging from Pre-K to Adult, including four- industry leading brands: Learning A-Z, ExploreLearning, Kurzweil Educational Systems and IntelliTools. Cambium Learning Technologies is a business unit of Cambium Learning Group, Inc. (Nasdaq: ABCD) based in Dallas, Texas. For more information, visit www.cambiumtech.com.

About Cambium Learning Group, Inc.

Cambium Learning® Group (Nasdaq: ABCD) is the leading educational company focused primarily on serving the needs of at-risk and special student populations. The company is comprised of three business units: Voyager Learning provides comprehensive print and online intervention solutions, professional development, and school turnaround offerings and includes Class.com and Voyager Education Services; Sopris Learning is known for supplemental solutions including assessment, supplemental intervention, positive behavior supports and professional development; and Cambium Learning Technologies develops instructional and assistive technology and represents IntelliTools®, Kurzweil Educational Systems®, Learning A- Z, and ExploreLearning. Believing that all students can achieve, Cambium Learning Group is committed to providing evidence-based support and expert professional services to empower educators and increase student achievement. Learn more at www.cambiumlearning.com.



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