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The experience speaks for itself™

CASE STUDY

Landmark College Integrates Dragon® NaturallySpeaking® to Help Students with Learning Disabilities Achieve Academic Success

CHALLENGE: HELP STUDENTS WHO LEARN DIFFERENTLY SUCCEED IN COLLEGE AND THE WORKFORCE

Landmark College incorporates highly accessible educational approaches to empower learning disabled students to master skills and strategies for success in mainstream settings. To that end, the school strives to integrate assistive technology into the learning process wherever possible.

SOLUTION: DRAGON® NATURALLYSPEAKING®, THE WORLD'S BEST-SELLING SPEECH RECOGNITION SOFTWARE

Dragon NaturallySpeaking enables students with physical disabilities who are unable to write by hand or use a keyboard to produce papers and other assignments simply by speaking. It also helps students with learning disabilities to express themselves in writing more easily by eliminating reading and spelling concerns that impede their progress.

THE RESULTS: GREATER INDEPENDENCE, WRITING EASE AND FLUENCY, REMEDIAL READING, WRITING, AND SPELLING PROGRESS

Using Dragon, Landmark College students have been able to achieve greater independence in their schoolwork; express themselves in writing with enhanced ease and fluency; and make marked progress in spelling, reading and writing.

Overview

Landmark College is a private, two-year liberal arts institution of higher learning in Putney, Vermont, that serves a population of approximately 485 students with dyslexia, attention deficit hyperactivity disorder, and other diagnosed learning disabilities. One of the only accredited colleges in the U.S. designed exclusively for students with dyslexia, attention deficit hyperactivity disorder (AD/HD), or other specific learning disabilities, Landmark integrates principles of universal design and strategic learning within a technology-rich, learning-centered environment. Landmark's faculty and staff provide a high degree of individual attention to students as they develop self-understanding, self-advocacy, lifelong learning skills, and the ability to function autonomously in mainstream settings.

Landmark's highly accessible educational approaches empower students who learn differently to master skills and strategies necessary for success in college and the workforce. By strategically integrating assistive technology into the learning process, Landmark's educators are able to provide rich opportunities for student-centered learning. These powerful technology tools—which include text-to-speech and voice recognition software, note-taking devices and software, and concept mapping programs—support students as they work to overcome a variety of learning challenges.

Putting voice recognition to work for students

Recent advances in voice recognition software and the hardware it runs on have yielded significant increases in performance, accuracy and ease of use. As voice recognition technology matured, Landmark saw its enormous potential for helping students with learning disabilities. When it came time to select a specific voice recognition software product for its students—particularly those in its Language Intensive Curriculum track—Landmark

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College did its homework. The Assistive Technology team looked at several solutions and selected Dragon NaturallySpeaking from Nuance Communications.

Dragon NaturallySpeaking gives users the power to create documents and emails three times faster than most people type —with up to 99% accuracy—just by speaking. With Dragon, students can surf theWeb by voice or dictate and edit in Microsoft Word, Excel, PowerPoint, and most other Windows-based applications. Dragon also enables the student to use voice commands for formatting documents, navigating applications, and locating files on the computer.

Taking the time to train Dragon pays off in more accurate recognition results. When a student creates a voice profile, Dragon starts with general models of how English is spoken in the US, and adapts to how that individual speaks (acoustic model) and which words he uses (vocabulary and associated language model). This approach accommodates users with varying accents and speech patterns and allows users to dictate using natural continuous speech. Dragon regularly refines the user's profile and employs it to accurately determine the words spoken and to choose between words that sound alike. Every time the user corrects a "misrecognition" Dragon updates his/her voice profile, enabling better recognition accuracy over time.

"When the college was evaluating voice recognition software, Dragon NaturallySpeaking's range of commands and the sensitivity of its speech recognition engine set it apart from other products," said Kathy Burris, Assistive Technology Coordinator and Educator at Landmark College. "Plus, the latest version of the software features more advanced adaptation techniques and new acoustic models that allow for exceptional coverage of non-native and regional accents. This is important to us since our students come from throughout the U.S. and across the globe."

Fostering student independence

Many Landmark students have disabilities that make it difficult for them to express themselves in writing. Many may face learning disabilities like dyslexia, which presents decoding and spelling challenges; dysgraphia, which causes a disconnect between an individual's thoughts and his ability to transform those thoughts into written words; or auditory, memory or processing disabilities that impede organization, outlining and written composition. Traditionally, such students have depended on parents, teachers, or peers to take notes for them or to transcribe their papers as they dictate. This approach not only fosters dependence, but it makes it difficult for the student to have a sense of the writing flow without having a draft to re-read as each sentence develops.

Landmark has found voice recognition software to be a valuable tool for enabling greater levels of independence and success when it comes to all forms of student writing—from assignments and papers to note taking and email. With Dragon, students can talk to their computers and watch their spoken words instantly

appear in documents, presentations, email, and instant messages. For greater convenience and mobility, they can also dictate into a Nuance-certified handheld recorder and Dragon will automatically transcribe the recording when they sync with their PC.

Freeing up cognitive space

For some Landmark students, getting the first couple of sentences down on the page can be the most difficult part of the writing process. For example, dyslexic students often face reading and spelling challenges, which present enormous hurdles to written expression. Difficulties with working memory prevent other students from managing more than one aspect of the writing task at a time. As a result, completion of papers, reports, and other writing assignments can be a frustrating and extremely time-consuming endeavor.

Dragon NaturallySpeaking frees up cognitive space in the brain to jumpstart the writing process, allowing these students to get their thoughts on the page without worrying about reading and spelling. As students dictate their thoughts, Dragon automatically turns speech into correctly spelled text. Furthermore, Dragon's playback function enables students to hear—rather than read—what they've written, so they can make edits as needed. By listening to their writing, some students become more aware of issues like awkward phrasing or poor sentence structure that require revision.

"A student in our summer program was struggling with his writing—rushing to get out his thoughts and skipping words he couldn't spell—to the point where one of his teachers would have to fill in every fifth word or so in his papers," said Burris. "After training on Dragon for approximately one hour and fifteen minutes, this student was able to go to the computer lab and complete a high quality, six-page paper on Helen Keller in a single evening. This accomplishment really boosted his self-confidence."

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Serving remedial as well as assistive functions

Studies have shown that voice recognition promotes improved spelling and word recognition as students watch the words they speak get transcribed, word by word, on the computer screen. Other research validates the technology's usefulness in increasing writing ease and fluency. Having repeatedly witnessed Dragon's effectiveness as a remedial tool, the educators at Landmark College can corroborate these findings.

"When I asked one of my students—a proficient Dragon user—to do a dictation demo at an upcoming board meeting, she agreed but asked for some review training," stated Burris. "Noticing my surprise, the student explained that she had stopped using Dragon for a while. She said that using Dragon had actually helped her learn how to spell and put her thoughts together more easily, so she was no longer dependent on it for the bulk of her papers."

Helping more than just students

Landmark students are not alone in their enthusiasm about Dragon NaturallySpeaking. Many faculty and staff members have become avid Dragon users, too. One instructor created a Dragon voice profile so she could record her lectures and make them available to students with disabilities that impede effective note-taking during class. Other faculty and staff use Dragon to increase the quality and efficiency of their work—from correspondence and email to reports and assessments.

"I use Dragon all the time," stated Burris. "Shortly after I started working at Landmark, I was in an accident and lost complete use of my left arm for seven months. Because I couldn't type, I quickly learned the ins and outs of Dragon so I could take care of the administrative aspects of my job. I've been a devoted Dragon user ever since."

Breaking down barriers to success

Today, Dragon NaturallySpeaking is ubiquitous at Landmark College. Students enrolled in the Language Intensive Curriculum track are required to purchase Dragon and install it on their laptops. Other students can choose to buy a personal copy of Dragon or they can use the software in the college's computer lab or dictation rooms.

"We are always trying to make the students aware of Dragon and what it can do for them," added Burris. "Although we hold demos at new student orientations, on family weekends, in the student center and dorm lounges, and at meals in the dining halls, interest in Dragon spreads via word-of-mouth more than anything else. As a result, there's constant demand for individual, cohort, and class training."

Having seen what students have been able to accomplish with the help of Dragon, Landmark educators are eager to spread the news to other professionals in the field of special education. Burris and her associates demonstrate Dragon on Professional Visit Days; during off-campus outreach visits at high schools, colleges, and educational conferences; and at summer workshops offered by the Landmark College Institute for Research and Training. Through these demos, Landmark seeks to provide an opportunity for other educators to learn how Dragon can be used to facilitate academic skill development and provide fuller access to educational programs.

"Landmark College acknowledges but does not accept the societal practice of labeling and stigmatizing students who learn differently," concluded Burris. "Instead, they strive to provide accessible approaches to learning that empower these individuals to exceed their aspirations and achieve their full potential. It's wonderful to see how integrating tools like Dragon into the learning process is changing the lives of students who have been marginalized for so long."

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