Frequently Asked Questions (FAQ): Voice Recognition Software in Montgomery County Public Schools

What is Voice Recognition Software?

Voice recognition (VR) is also referred to as “speech-to-text,” and is a form of “speech recognition.” In general, voice recognition tools allow individuals to convert spoken words to text.

“Voice recognition is a system trained to a particular user, where it recognizes their speech based on their unique vocal sound. (Speech recognition is a broad term which means it can recognize almost anybody's speech - such as a call-center system designed to recognize many voices.)” (retrieved from http://en.wikipedia.org/wiki/Voice_recognition on March 20, 2010)

What types of software tools can do this?

Currently, MCPS does not have voice recognition on tech mod images. There are two software applications that schools can purchase:

- **SpeakQ**: Schools that have WordQ word prediction software on their school image can purchase a supplementary tool called SpeakQ. SpeakQ plugs into WordQ and adds speech recognition. These tools were designed for individuals with learning disabilities.
- **Dragon Naturally Speaking Preferred**: Schools can also purchase Dragon Naturally Speaking. This is a more complex voice recognition program optimized for hands-free control of the computer.

How do voice recognition tools benefit struggling writers?

Voice recognition is a long-term solution to writing deficits. Unlike dictating to a scribe or a tape-recorder, VR does not eliminate the need for students to practice and learn the process of writing (i.e., planning, drafting, composing, & editing). Effective use of VR as a writing method requires training, multi-tasking and compositional skills. VR as compensatory strategy must be seen as a part of multi-faceted writing instruction.

What is the research on voice recognition?

<table>
<thead>
<tr>
<th>Authors</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graham, 1990, Reece and Cummings 1996</td>
<td>Speech recognition gets past the barrier of transcription (handwriting and spelling)</td>
</tr>
<tr>
<td>Higgins &amp; Raskind, 1995</td>
<td>VR enhanced the quality of writing compared to handwriting in college students with LD.</td>
</tr>
<tr>
<td>De La Paz, 1999</td>
<td>VR “frees users from worrying about spelling and handwriting, but it imposes new burdens—careful speech, vocabulary building, explicit punctuation, error correction, play back and editing procedures, not to mention the initial training requirements”</td>
</tr>
</tbody>
</table>
What are the pros and cons of voice recognition?

Pros

- Allows students to speak their text
- Can provide some students writing independence
- Unlike dictation to a scribe, it does not adversely affect learning to write

Cons

- High cognitive load due to multitasking: think>compose>speak> read> revise
- Significant training required for functional school use.
- Good reading skills required
- Process writing skills required

Which students are good candidates for voice recognition?

The following considerations should be kept in mind when choosing to try voice recognition:

- Consistency of enunciation
- Appropriate syntactical speech patterns
- Can inhibit “Uhms,” “ahhs”, etc.
- Ability to express ideas with verbal language
- Auditory and visual attending skills
- The ability to multitask: to think-compose-speak-read-revise
- The ability to recognize and revise incorrect words
- Problem solving skills
- Frustration tolerance
- Perseverance
- Motivation to use an alternative method of writing
- Self monitoring abilities

What can you do to help a student get ready to use voice recognition?

Using VR is not as simple as speaking to an adult or speaking into a tape recorder; it requires training, multi-tasking and process writing skills. One way to begin is by teaching the student how to use his or her voice to answer questions within digital text. This will help students “think-compose-speak-read and revise. For example:

<table>
<thead>
<tr>
<th>References</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MacArthur &amp; Graham, 1991</td>
<td>Researchers concluded: The cognitive demands of writing mechanics interfere with fluency and the quality of writing for LD kids. General dictation [scribing] is 9 times faster than handwriting and 2 times faster than word processing. Mechanical demands interfere with written productivity.</td>
</tr>
<tr>
<td>DeLaPaz &amp; Graham, 1997; Reece, 1992</td>
<td>Concluded that neither dictation [i.e., tape recording, scribing] nor [voice] recognition is sufficient by itself to offset the difficulties that persons with LD have in composing.</td>
</tr>
<tr>
<td>MacArthur &amp; Calalier 2004</td>
<td>31 10th grade students achieved 85% accuracy on sentence dictation without editing and 92% accuracy with editing.</td>
</tr>
<tr>
<td>Quinlan 2004</td>
<td>MS students with writing problems wrote longer papers and made fewer errors using VR compared to average writers.</td>
</tr>
</tbody>
</table>
• Insert sound object in MS Word (video)
• Insert recorded voice in Inspiration (video)
• Insert recorded sound in PowerPoint

How do you train students on voice recognition?

According to the Fairfax County AT team, it takes 6 months to 18 months using VR 3-4 times per week for 40+ minutes for students to get to the level of using it to accomplish school assignments. There are 5 stages of training:

• Training voice files
• Learning VR commands and multiple ways to make corrections
• Using VR to write simple messages, letters, emails
• Using VR to do outlining and simple class assignments (e.g., vocabulary definitions)
• Using VR to compose essays

The Mississippi Bend AEA AT team advocates an intensive four session trial protocol that takes 3-4 hours over a period of a week to evaluate whether VR is an appropriate intervention. Once decided, a regular training schedule needs to be set up for the student to become proficient using the tool.

How much do these software programs cost?

The following prices are listed on the MCPS Assistive Technology bid list. (Please note, these prices or for MCPS school purchases only.)

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Code</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Envision Technology</td>
<td>785.75</td>
<td>SpeakQ Software, 1-Computer License. Quillsoft SPECED</td>
<td>$120.00</td>
</tr>
<tr>
<td>Envision Technology</td>
<td>785.75</td>
<td>SpeakQ Software, 5-Computer Site License. Quillsoft SPECED</td>
<td>$575.00</td>
</tr>
<tr>
<td>Learning Services</td>
<td>785.75</td>
<td>Dragon Naturally Speaking Preferred 10</td>
<td>$157.95</td>
</tr>
</tbody>
</table>

If you have a question about purchasing these products please contact:
Speri Silverman
Special Education
301-657-4959

Who is responsible for making sure students have access to voice recognition?

It is the responsibility of the IEP team to conduct a trial using voice recognition to be sure that it is an effective strategy, and to document this. It is the responsibility of the Special Education team to inform teachers of students who have accommodations.

How do you know if voice recognition is effective for a student?

Voice recognition takes training and persistence. The best way to know if a student benefits from voice recognition is to set up a trial period.
Does there need to be some documentation in the IEP before a student is permitted to use voice recognition.

Any student can use voice recognition software. However, students do need documentation on their IEP before using “Speech to Text” for testing. (See the response accommodations in the MD Accommodations Manual, 2008.) Students must be using VR instructionally prior to using it in a testing environment.

When is voice recognition documented on the IEP?

Voice recognition should be indicated on the IEP when the IEP team has determined that VR is required for access to the curriculum or to address specific IEP goals. Document VR in the following ways:

1. On the Special Considerations and Accommodations-Assistive Technology Required page: If voice recognition has been tried and found to be successful to support writing, then you should indicate “yes,” to “The student needs an AT device.” The decision to use this should be documented here.

2. On the Special Considerations and Accommodation- Instructional and Testing Accommodations page: Under Response Accommodations, Speech to Text should be selected.

3. On the Special Considerations and Accommodation- Supplementary Aids, Services Program Modifications and Supports page: Clarify the location and manner in which supplementary aids will be provided, and document the discussion to support the decision.

Where can my school staff get help implementing voice recognition in our school building?

Call or email HIAT with your questions.

You may be interested in the following workshops which focus on writing strategies using technology:

- SA-93 Differentiated Writing Tools (1 credit CPD course)
- MS Word 07: Everyday writing supports for student learning
- Graphic Organizers

Information and scheduling for these and other HIAT classes can be found on the [training page](#).