

# Voice-Recognition Software – An Introduction

## What is Voice Recognition?

Voice recognition is an alternative to typing on a keyboard. Put simply, you talk to the computer and your words appear on the screen. The software has been developed to provide a fast method of writing on a computer and can help people with a variety of disabilities. It is useful for people with physical disabilities who often find typing difficult, painful or impossible. Voice-recognition software can also help those with spelling difficulties, including users with dyslexia, because recognised words are almost always correctly spelled.

## Voice-Recognition Software

Voice-recognition software programmes work by analysing sounds and converting them to text. They also use knowledge of how English is usually spoken to decide what the speaker most probably said. Once correctly set up, the systems should recognise around 95% of what is said if you speak clearly.

Several programmes are available that provide voice recognition. These systems have mostly been designed for Windows operating systems, however programmes are also available for Mac OS X. In addition to third-party software, there are also voice-recognition programmes built in to the operating systems of Windows Vista and Windows 7.

Most specialist voice applications include the software, a microphone headset, a manual and a quick reference card. You connect the microphone to the computer, either into the soundcard (sockets on the back of a computer) or via a USB or similar connection. Then you can begin talking using the following steps.

## Enrolment

Everybody's voice sounds slightly different, so the first step in using a voice-recognition system involves reading an article displayed on the screen. This process, called enrolment, takes less than 10 minutes and results in a set of files being created which tell the software how you speak. Many of the newer voice-recognition programmes say this is not required, however it is still worth doing to get the best results. The enrolment only has to be done once, after which the software can be started as needed.

## Dictating and Correcting

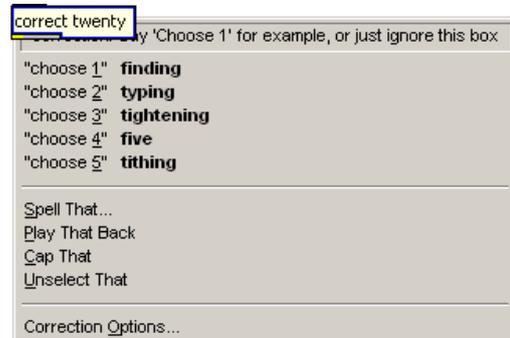
When talking, people often hesitate, mumble or slur their words. One of the key skills in using voice-recognition software is learning how to talk clearly so that the computer can recognise what you are saying. This means planning what to say and then speaking in complete phrases or sentences.

The voice-recognition software will misunderstand some of the words spoken, so it is necessary to proofread and then correct any mistakes. Corrections can be made by using the mouse and keyboard or by using your voice.

When you make corrections, the voice-recognition software will adapt and learn, so that (hopefully) the same mistake will not occur again. Accuracy should improve with careful dictation and correction.

In the example at right, the word 'typing' has been recognised by the software as

'twenty'. To correct it, you would say "Correct twenty," followed by "Choose 2."



## Editing and Formatting Text

Text can be edited very easily. You can highlight the text to be changed by using commands such as "Select line," or "Select paragraph," and then saying the changes you want to make to the computer. These will then replace the selected text.

Applying formatting is just as straightforward. For example, if a document has the phrase 'introductory thoughts', you can underline this phrase by saying "Select introductory thoughts," and then saying "Underline that."

## **Controlling the Computer**

Many voice-recognition programmes offer the ability to start and control programmes through spoken commands.

- **Commands** vary, depending on which voice-recognition programme you are using. For example, with the programme Dragon NaturallySpeaking you could say "Start Microsoft Word," then "Open letter to John."
- **Menus** can be selected simply by pausing and then saying the menu item. For example, saying "File" would open the file menu.
- **On the Internet**, you can dictate web addresses and browse websites simply by saying the text in the link.
- **For tasks that require a mouse**, there are spoken commands to enable the mouse to be moved, dragged and clicked.

## **Examples of Voice-Recognition Programmes**

There are several main voice-recognition programmes available:

### **Windows Vista and Windows 7**

The latest versions of Microsoft Windows have a built-in voice-recognition programme called Speech Recognition. It does not have as many features as Dragon NaturallySpeaking but does have good recognition rates and is easy to use. As it is part of the Windows operating system, it does not require any additional cost apart from a microphone.

Web: <http://www.microsoft.com/enable/>

### **Dragon NaturallySpeaking**

This programme is produced by Nuance. Dragon NaturallySpeaking is widely considered to be the market leader for voice-recognition software. It is available in different editions, one of which may suit your needs better than the others, as indicated

in the chart below. For Mac OS X, Nuance produces Dragon Dictate (formerly MacSpeech Dictate).

Web: <http://www.nuance.co.uk/dragon/>

	<b>Dragon NaturallySpeaking Preferred Version 10</b>	<b>Dragon Naturally Speaking Professional Version 10</b>
<b>Overview</b>	<p>A good choice for people with physical difficulties and dyslexia:</p> <ul style="list-style-type: none"> <li>• A comprehensive set of commands to allow voice control of the computer</li> <li>• Speech output facilities to help with corrections</li> <li>• It can be used with portable recorders</li> </ul>	<p>A more advanced version for business users and for people who need to work completely hands-free:</p> <ul style="list-style-type: none"> <li>• Voice commands for Lotus Notes and Microsoft Outlook.</li> <li>• The ability to write new voice commands to assist easy hands-free use of the computer</li> </ul>

## Training and Support

People who are new to voice-recognition software often need to arrange a number of one-to-one training sessions to get the most out of the software. There are a number of specialist suppliers of voice-recognition solutions who can provide you with training, suggest suitable computer systems and assist with installation.

## Frequently Asked Questions

- **How is it affected by background noise?** The headset microphones supplied with the products are fairly good at filtering out background noise. If background noise is a particular issue, you may need a higher-specification microphone.
- **What about technical jargon?** Modern voice-recognition systems already 'know' thousands of words, including specialist language from the legal and medical fields. New words and phrases can be added and trained easily.

- **Is ‘voice strain’ a risk?** When working with speech-recognition systems, you should take steps to minimise strain: sit comfortably; speak at a normal pitch/volume; take breaks and drink regularly.
- **What about catching colds?** Some people’s voices change when they have a cold and this may result in slightly worse recognition.
- **How many people can use the software on one computer?** There is no limit to the number of users. Each one will require 20-30MB of space on the hard disk of the machine. Each person needs to load their own voice settings before they start to dictate.
- **Can the software be used to transcribe meetings?** No – it only works with one speaker at a time.
- **Can recording devices be used with speech recognition systems?** Yes – speech recorded on pocket-sized recorders can be transferred to a computer and then ‘transcribed’ to text (see the factsheet ‘Voice-Recognition – Advanced Features’ for further information).

## **Troubleshooting**

There may be issues with voice-recognition software for users with specific needs or who have particular ways of working.

- **The software runs too slowly:** Voice-recognition systems need relatively new computers with a lot of memory. Business users and people working with large applications will benefit from having additional memory.
- **Poor recognition:** This can be a problem if the computer is not getting a clear signal from the microphone or if the user is not speaking clearly.
- **Difficulty spotting mistakes in work:** This can be an issue particularly for people with dyslexia. Choose a package that includes text-to-speech so that text can be spoken by the computer and reading avoided – then you can listen out for mistakes. For further information, see the factsheet ‘Dyslexia and Voice-Recognition Software’.

- **Difficulty using a headset microphone:** There are a number of alternative designs of microphone that can be used, including stand microphones, collar microphones, array microphones and hand-held microphones.
- **Impaired speech:** Voice-recognition software can adapt to non-standard speech. Some systems are better than others – seek advice as to which might work best for you.

## **Other Useful Factsheets**

This factsheet gives an overview of voice-recognition software. The following factsheets cover more advanced topics:

- Voice-Recognition Software – Advanced Features and Concepts
- Dyslexia and Voice-Recognition Software

### **Notes:**

- This factsheet has been developed through a partnership between My web my way ([www.bbc.co.uk/accessibility](http://www.bbc.co.uk/accessibility)) and AbilityNet, a UK computing and disability charity.
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