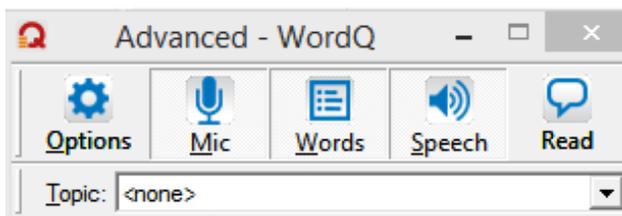


SpeakQ Speech Recognition Plug-in for WordQ

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What is SpeakQ?

SpeakQ is a speech recognition plug-in for WordQ on the PC (using Microsoft Speech Recognition) that seamlessly integrates speech recognition with word prediction and speech feedback. It is sophisticated and powerful, yet clear and easy to use. SpeakQ has distinct advantages over using separate products for speech recognition and word prediction/speech feedback.



Speech recognition is most successfully used by doctors and lawyers for dictation tasks. It is also used by many in the general public for verbal commands on mobile devices (e.g., searching for information) and in cars, as well as for short text messages. However, speech recognition is rarely used by the average person for general writing tasks, unless they are specifically taught to dictate like a doctor or lawyer in complete grammatically correct phrases and sentences. Admittedly, speech recognition is one of the best solutions for persons with certain disabilities, when other forms of typing are slow, fatiguing or impossible.

While modern speech recognition can recognize and keep up with normal speech rate (i.e., about 150 words per minute, which is the suggested rate for audible books), actual writing speeds over a document are significantly slower (about 30 wpm). There are three reasons. First, when creating novel text (e.g., for an essay or report), few people can continuously think and dictate complete sentences, let alone paragraphs or longer. Second, editing by voice is cumbersome and most people switch back to using the keyboard and then forgo speech recognition entirely. Third, the act of speaking to a computer is not a normal activity. Unlike a friend or colleague, a computer offers no feedback to what you say, and it can misunderstand you, often embarrassingly so. How you talk to your friends is quite different from how you write using speech.

While these reasons should not be a deal-breaker for using speech recognition, most people quickly grow disillusioned as the technology fails to meet their expectations as promoted by speech recognition companies. For most, typing is simply faster. However, there are clear benefits to using speech recog-

ognition because talking is a basic human activity and therefore, it is generally easier to speak than to write or type.

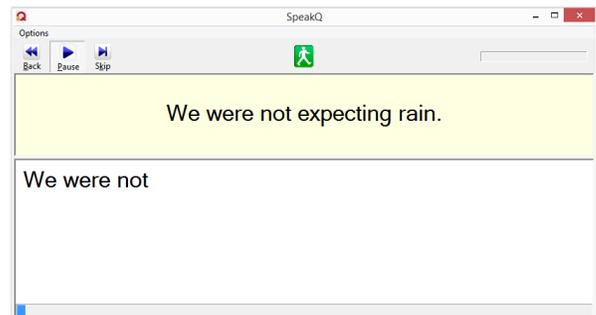
SpeakQ is designed with the above realities in mind. It is not for doctors and lawyers but for people who could benefit from the power of speech recognition in getting their ideas written down. You can speak text, type on the keyboard, choose word predictions from a list, or alternate between these methods. SpeakQ has one simple purpose—to allow you to speak and write so that you can become a much more competent and confident writer!

How do you use SpeakQ?

You should first be familiar with using WordQ before diving into using SpeakQ.

There are several novel features of SpeakQ that you will use:

- An alternative speech training interface with speech prompting helps you learn how to talk to a computer and helps the computer better understand your speech. During training, text is presented (both visually and spoken) in phrases for you to speak. If you make any mistakes, the computer doesn't understand you, it will patiently ask you to repeat.



- During use, the computer speaks back whatever it understands that you have said, thereby giving you a chance to make revisions if needed.
- Speech is integrated with word prediction such that while editing spoken text, word predictions are suggested that combine your speech with predictions.
- Speech recognition can be used in either a *discrete* or *continuous dictation* mode.
 - With *discrete dictation*, what you say is displayed in the word prediction list for your review before entering it into your application. This supports a slower dictation pace. You can type initial letters to refine recognition.

With this approach you control the words that are entered into your documents while improving the recognition accuracy. Consequently, you spend less time correcting errors, and more time on the real task of writing.

- With *continuous dictation*, what you say is immediately entered into your application and spoken back.
- To reduce complexity, SpeakQ emphasizes the task of writing, and eliminates the need to memorize voice commands. You only dictate text.

Most beneficial uses of SpeakQ

Can you type an entire document with speech recognition alone? No. With SpeakQ, you always use a keyboard for some tasks, e.g., manipulation of text while editing and proofreading, or you may just mix in speech with your typing.

There are several activities in which SpeakQ offers significant benefits over typing alone:

1. *Quickly getting your initial ideas down before you forget.*

A graphic organizer, such as Inspiration, is useful to use with SpeakQ to get down your initial ideas. Here, spoken phrases easily create distinct idea bubbles to later organize. Alternately, you can speak into a word processor in an outline or list view. Perfect recognition and grammar are not critical at this stage—just your ideas. Use WordQ at a later stage to help with editing. SpeakQ's continuous dictation mode is generally best for this activity, unless you have impaired speech or are uncomfortable speaking longer phrases. In this latter case, it may be easier to use the discrete dictation mode along with typing and word prediction.

Interestingly, it is often the fear of speaking incorrectly and/or with bad grammar that makes people uncomfortable talking to a computer. SpeakQ offers a unique alternative. You can speak your idea including important keywords that are hard to spell without concern for precision. Using continuous dictation, speak your idea, press the <ESC> key to erase what was just entered, and begin typing. Speech-enabled word prediction kicks in with your spoken words acting as a temporary topic set that make predictions very accurate. Even close-sounding words are considered.

2. *Be more productive with phrases.*

We often use many common phrases and idioms within novel text (e.g., “We would appreciate if you would...”, “We regret to inform you that...”). While you might consider using abbreviation-expansions to generate the phrases, this would require creating them in advance. Instead, in the midst of your typing, simply turn on the microphone and speak the phrase, and then switch back to typing. SpeakQ can automatically turn off the microphone after you speak.

3. *Get unstuck when spelling a difficult word or phrase that interferes with your train of thought.*

This is similar to the previous situation that is easily resolved by simply turning on the microphone and speaking the word or phrase, and then switch back to typing.

4. *Practise talking clearly.*

Current speech recognition, including the latest Microsoft Speech Recognition, has advanced to the level that you do not need to always pre-train to have it recognize your speech. However, SpeakQ still works best if you use its training interface.

SpeakQ's training interface, on its own, has another benefit beyond improving recognition for writing—to practise speaking clearly independently. This benefits second language learners as well those who have difficulty speaking or who speak in “street language.”

The training interface acts as a model for how you should speak clearly. It is like a human speech trainer who speaks an example, patiently listens to you, and asks you to repeat when necessary. The training interface also allows you to put in custom text to practise by yourself. For example, you may incorporate phrases to practise speaking before a job interview.

If you are learning a second language, you can choose another recognition engine (requiring the download of a language pack from Microsoft). You then create texts to practise with the training interface in that language.

A simple hint that we have learned with SpeakQ that applies almost universally is, “never begin speaking until you know how your phrase or sentence ends.”