

ELT Resources Review

Assistive technologies to support English learners

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Summary: With the rapid development of technology, various assistive technologies have emerged to help English Learners (ELs) improve their skills and to benefit teachers by making their content more accessible. Microsoft tools have made great strides in assistive technology and have embedded these innovations into their popular Office productivity suite. However, users are often unaware of the myriad functions hidden within the menu bars in each tool. Many of these contain beneficial accessibility features. This article will discuss eight different types of assistive technologies that are integrated into Microsoft tools that teachers likely already use on a regular basis.

Keywords: assistive technology, Microsoft Office, language learning, technology, immersive reader, translating, subtitling

Introduction

According to the National Center for Education Statistics (NCES), in 2019, 10.4% of K-12 public school students (approximately 5.1 million students) in the United States are identified as English Learners (ELs) (2022). Learning a new language or learning academic content in a new language can be a daunting task for many individuals,

especially those who struggle with language acquisition. Fortunately, with the rapid development of technology, various assistive technologies have emerged to help ELs improve their skills (Baralt & Gurzynski-Weiss, 2019). In recent years, Microsoft has made great strides in assistive technology and has embedded these innovations into their popular Office productivity suite. However, users are

often unaware of the myriad of functions that exist within the menu bars (also called “ribbons”) present in each of these tools, many of which contain accessibility features that can benefit ELs and their teachers. This article will discuss several assistive technologies that have been integrated into Microsoft tools. For organizational purposes, these features have been divided among the four foundational language domains of Listening, Speaking, Writing, and Reading.



Figure 1: Subtitle settings and subtitle language settings in Microsoft PowerPoint on Desktop

Assistive technologies for ELs: Listening

Presentation Subtitles

Built into PowerPoint is the ability to activate automatic subtitling in

presentation mode. Located within the *Slide Show* menu, enabling subtitling activates your system's microphone which captures spoken audio from the presenter. The recorded speech will then appear as subtitles below the slides while in presentation mode. Furthermore, PowerPoint includes the ability for presenters to have these subtitles translated to other languages (see Figure 1). This goes beyond rote vocabulary translation with subtitles automatically rewriting themselves as presenters' complete sentences to match the grammatical syntax of the target language. With over 60 languages supported, this technology allows ELs to connect their first language to English and facilitate their language acquisition process (Baralt & Gurzynski-Weiss, 2019).

Since listening comprehension is challenging for ELs (Poehner et al., 2019), subtitles in English or in first languages allow ELs to follow the dialogue and understand the meaning of unfamiliar words or phrases. This technology can also help ELs with pronunciation and with understanding the meaning of words in specific contextual settings.

Read Aloud

Also known as text-to-speech, Read Aloud functionality allows ELs to hear written text read aloud at the speed of their choosing. This can help ELs improve their listening skills and can also be used to check the pronunciation of unfamiliar words to develop fluency and help with

reading comprehension (Kaplan & Murray, 2018). Read aloud functionality can be accessed across most of the Office suite such as in the *Review* menu in Word, the *Home* menu in Outlook, and in the address bar in Edge web browser when engaging with web-based content.

Assistive technologies for ELs: Speaking

Reading Progress

Reading Progress uses an auto-detection process to identify errors in accuracy in fluency in the recorded reading. These errors are then categorized and color-coded (purple for mispronunciations, grey for omissions, turquoise for insertions, blue for repetitions, and orange for self-corrections) based on a reading sensitivity scale set by the teacher (see Figure 2). This information is then displayed for review along with the recording, allowing teachers to determine areas that need improvement and to adapt lessons to ELs' individual needs.

Reading Coach

As a follow-up option to Reading Progress, Reading Coach offers ELs the opportunity to independently improve their speaking fluency. The Reading Coach will automatically identify five words that the EL struggled with while reading a passage out loud. The tool then uses speech recognition, text-to-speech functionality, and automated feedback to generate exercises that help the EL practice their pronunciation alone. Reading Coach is

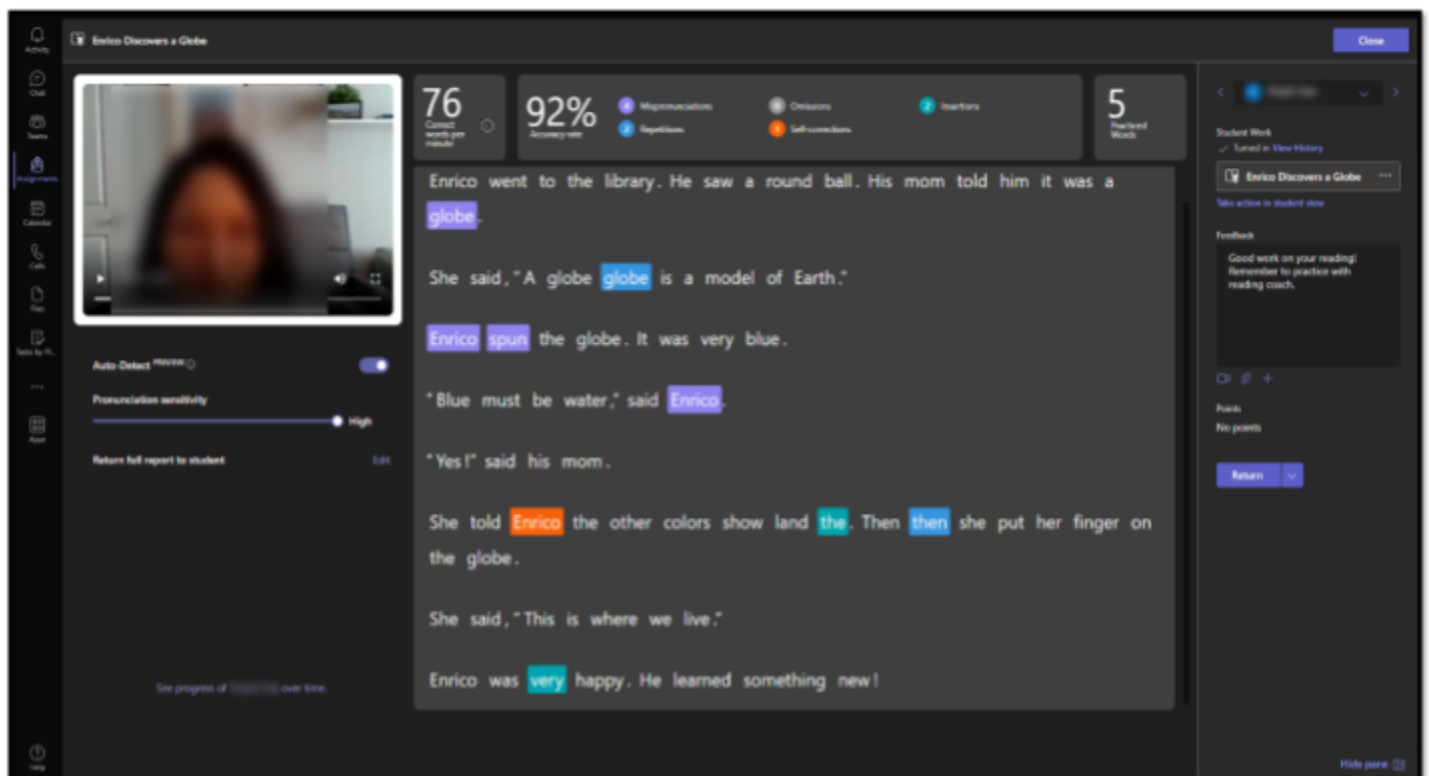


Figure 2: Teacher's interface in Reading Progress for Microsoft Teams on Desktop (Note: The student's image and name have been blurred to protect their identity.)

available as a built-in option that can be included in Reading Progress activities in Teams. Alternatively, it can be accessed directly in Office 365 applications under the *Reading Preferences* tab in Immersive Reader.

Assistive technologies for ELs: Writing

Dictate

Speech-to-text software allows ELs to dictate text into their devices which is then converted into written text. As commonly used on the phone, this assistive feature is also available within most of the Office suite, such as in the *Home* menu within Word. This can be helpful to ELs who struggle with writing but are proficient in speaking, as they can focus on transferring their ideas onto the page by speaking rather than worrying about spelling and grammar (Wang & Zou, 2019). Furthermore, Microsoft's dictation software offers auto-punctuation which can help ELs grasp the English language's complex punctuation rules.

Assistive technologies: Translate

Within the *Review* menu of many Office applications is the Translate function. ELs can translate passages or whole documents to over 100 supported languages. Not only an efficient tool for multilingual communication purposes, Translate also serves as a convenient tool to help ELs check their English writing coherence by translating their text back to their first language. Furthermore, this feature provides additional context for translated words, such as the part of speech, definitions, synonyms, and alternative translation options (see Figure 3).

Translation features are also included in all Microsoft applications that include Immersive Reader.

Assistive technologies for ELs: Reading

Reading View

Although there are many reading views available, the most popular among Microsoft accessibility tools is Immersive Reader, which is in a wide range of Microsoft supported applications. These applications include the Office suite, Edge, Flipgrid, OneNote, and Canvas.

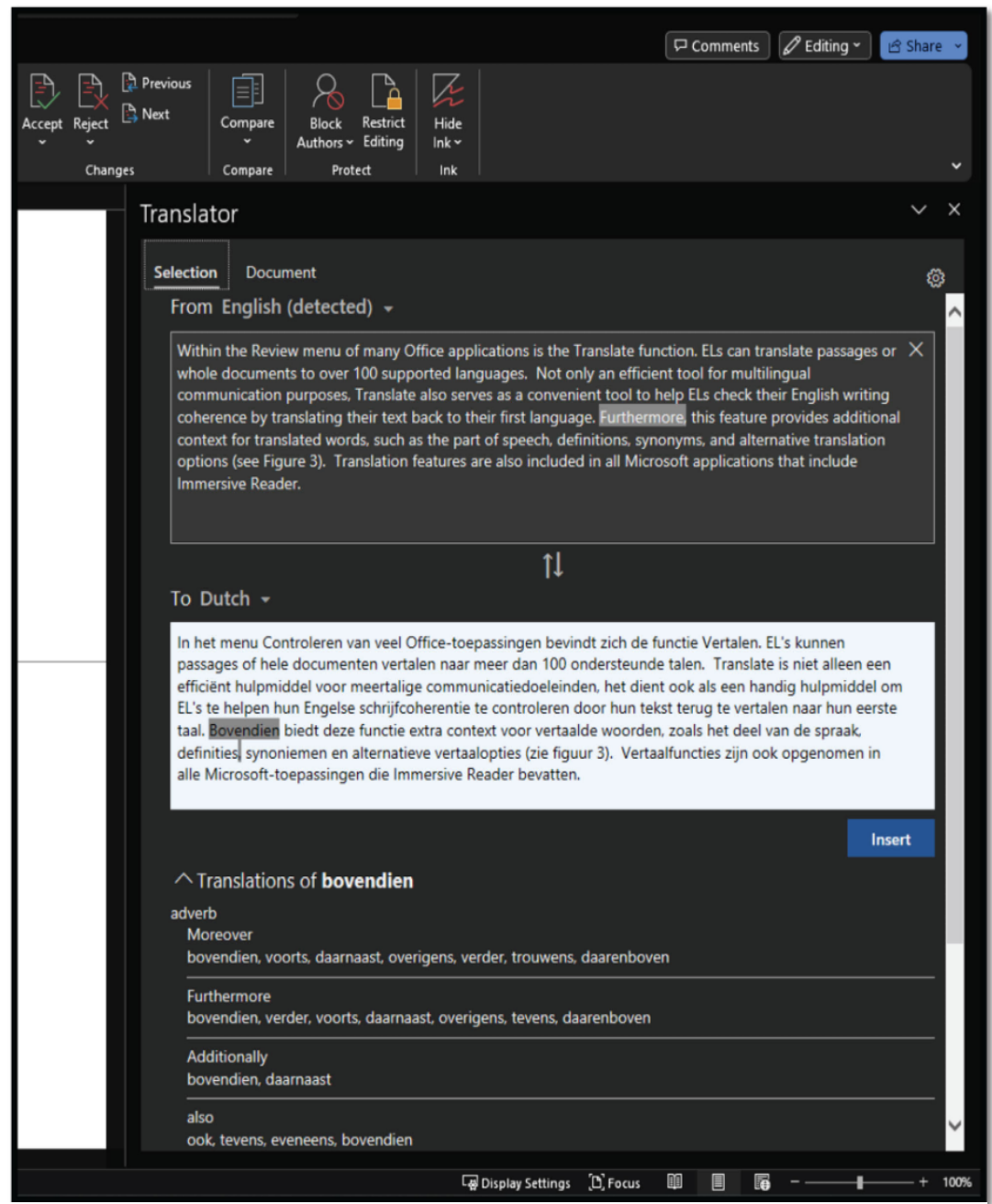


Figure 3: Using the translate feature in Microsoft Word on Desktop to translate a passage from English to Dutch (Notice the additional translation options for the highlighted word "furthermore" below the translated passage.)

Located in the *View* menu in Word, Immersive Reader gives ELs options to break down complex words into syllables, increase line spacing, highlight individual reading segments, color-code different parts of speech, and read aloud specific words or passages (see Figure 4). These features can promote ELs' vocabulary development and prosody by practicing decoding strategies.

Picture Dictionary

Available as part of Immersive Reader within web-based office applications, the Picture Dictionary can be used to display visual support for vocabulary learning. When ELs encounter an unknown word, they can select it to see an image of the word alongside a translation to provide

multiple layers of support in learning new vocabulary (see Figure 4). The Picture Dictionary can be activated under the *Reading Preferences* tab in Immersive Reader.

Conclusion

Assistive technologies have the potential to revolutionize the way ELs approach the learning process. Presentation subtitles support ELs listening comprehension, Reading Coach makes practicing speaking fluency easier than ever, Dictate facilitates the writing process, and Picture Dictionary enhances the understanding of new vocabulary. As technology continues to evolve, even more innovative and effective assistive technologies will emerge to help ELs achieve their language learning goals.

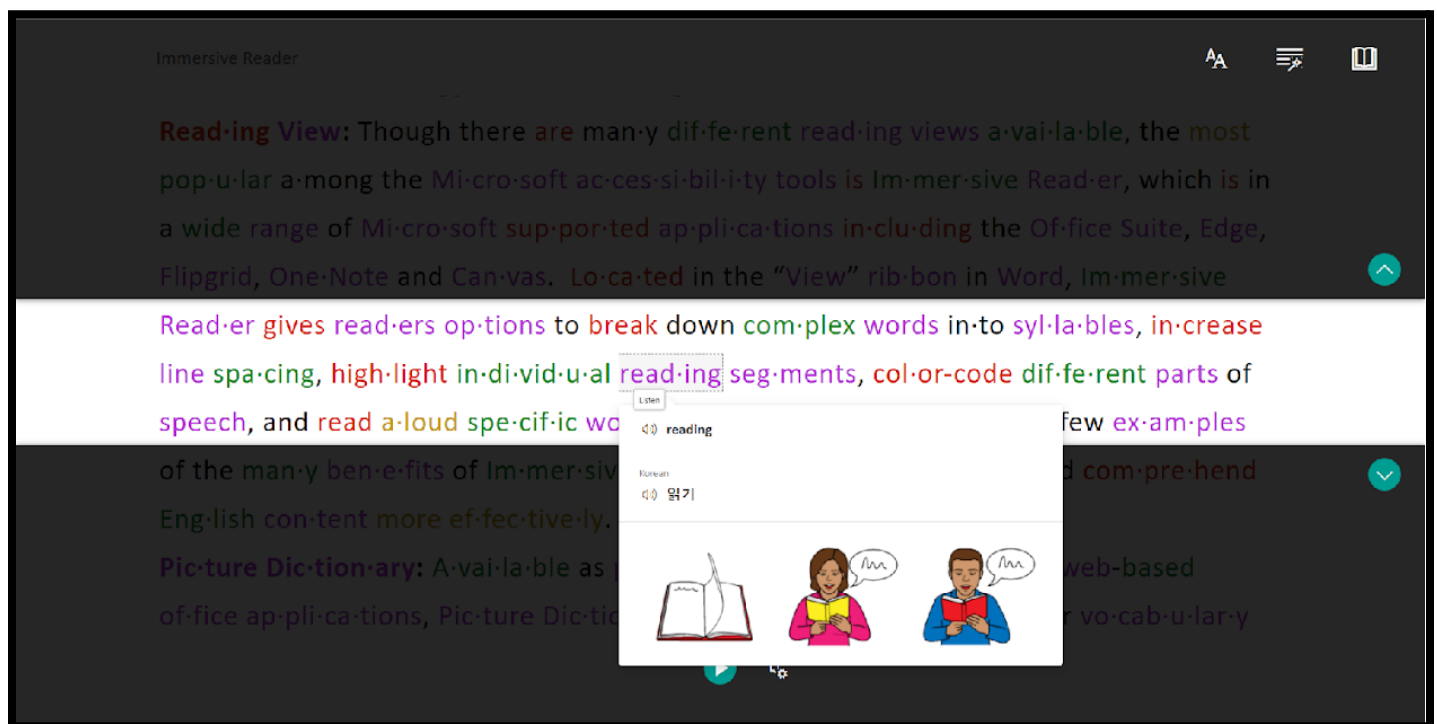


Figure 4: Immersive Reader in Microsoft Word in Office 365 (This image showcases line highlighting, parts of speech color-coding, syllable separation, picture dictionary, and vocabulary translation features.)

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