Framework: Assistive Technology

   A person may experience one or more of the features of autism to a greater or lesser degree. An altered developmental trajectory may result. The unique cognitive, linquistic, and social skills that come about can have a significant impact on expressive communication competence. Oral and/or written messaging may be inadequate for learning and social interactions. Assistive technology can augment speech attempts or provide alternatives to oral expression. A variety of high and low tech options are available for text, text-to-speech, and speech output.

Text, Text-to-Speech, and Speech Output:

Text:
 - A large variety of digital devices are available for text output. Computers, phones, and tablets provide access to a keyboard and production of text messaging.
 - They require a degree of manual dexterity and adequate written language and spelling competence.
 - Texting and email offer the added capability of sending a message to another user's device for reading.
 - Text communication presupposes that the communication partner has adequate reading comprehension skills and has the time and inclination to stop and read the message.
 - Text communication is slow and in a conversation delays responses and impairs reciprocity.
 - Persons with features of autism may struggle to produce legible handwriting and find that using a device for writing is faster and more effective.
 - Persons with features of autism may struggle to produce intelligible oral speech and find that using a device and text for connected utterances is preferred.
 - Low tech options are available that can be more affordable and more portable. Alphabet and word boards can be used along with images paired with text. These impose greater effort on the part of the communication partner to monitor board choices and connect letters and words.
 - Assistive technology for text communication will not alleviate other nonspeech barriers to communication that a person with features of autism might experience.

Text-to-Speech:
 - Many digital devices have the added capability to use synthesized speech to speak a text message.
 - There are dedicated text-to-speech devices designed for the use of individuals who do not have speech capability for any reason.
 - There are very sophisticated, expensive devices that have quite natural sounding synthetic speech and complex programs for word prediction and spell checking.
 - These speech output devices require a degree of manual dexterity and adequate written language competence.
 - Text-to-speech communication is slow and in a conversation delays responses and impairs reciprocity.
 - Text-to-speech communication with synthesized speech is a novel mode of messaging and may require a period of adjustment for the communication partner.
 - Persons with features of autism may struggle to produce intelligible oral speech and find that using a device and text-to-speech for connected utterances is preferred.
 - Low tech options are available that can be more affordable and more portable.
 - Assistive technology for text-to-speech communication will not alleviate other nonspeech barriers to communication that a person with features of autism might experience.

Speech Output:
 - There are dedicated speech output devices designed for the use of individuals who do not have speech capability for any reason.
 - These are very sophisticated, expensive devices that have quite natural sounding synthetic speech or recorded speech.
 - These speech output devices require a degree of manual dexterity to make choices on a touch screen.
 - Choice screens are usually customized for a specific user and an array for extended vocabulary can become quite complex.
 - Many of these devices will also have the capability of text-to-speech as well.

- They may have very simple or very complex programs with a range of semantic and syntactic capabilities.
- Connected speech may be assembled and spoken on some devices.
- Word, phrase, and sentence choices are usually represented with photos, images, or specialized icon systems.
- Speech output communication is slow and in conversation delays responses and impairs reciprocity.
- Speech output communication with synthesized speech is a novel mode of messaging and may require a period of adjustment for the communication partner.
- Persons with features of autism may struggle to produce intelligible oral speech and find that using a device and speech output for connected utterances is preferred.
- Low tech options are available that can be more affordable and more portable.
- Low tech options with or without speech output and only 2-4 image choices can be used as a tool for introduction to choice making.
- Assistive technology for speech output communication will not alleviate other nonspeech barriers to communication that a person with features of autism might experience.