

Text-to-Speech: The Swiss Army Knife of Assistive Technology

Beth Gatewood

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Talk Overview

- What IS Text-to-Speech?
- The Swiss Army Knife approach
- Addressing the human reader problem
- Understanding how Text-to-Speech can work
- Getting started with Text-to-Speech
- Bonus Material: Getting text that you can use TTS

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What is Text-to-Speech?

- It is a Computer Synthetic Voice 
- Read text on a screen (electronic text)
 - Computer
 - Phone
 - Tablet

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What does it sound like?

Sample text:
Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

Details:
1- Using the Built in Voice of Alex on my Mac
2- Voices with accents from Acapela
<http://www.acapela-group.com/text-to-speech-interactive-demo.html>

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How did I do that?

Slide 3:



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The Swiss Army Knife

Magazines

PDF

Web pages

Word documents

Books

Textbooks

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Benefits: Obvious and Not So Obvious

- Independence
- Increased through-put for greater quantity of reading
 - **Before**
 - 2 novels/ month (at reading level or lower)
 - **After**
 - 7.2 novels/ month (at reading level and above)

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And that means.....

72 books in 10 months

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The Devil and the Details

Voice is built into the device/ computer BUT how you access it is the devil

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Accessing Text-to-Speech

- ① OS level
 - Mac
 - Phones
 - Kindle
- ② TTS is built into the software
 - Chrome + SpeakIt
 - Word
 - Adobe Reader
 - Kurzweil/ Read,Write,Gold, ReadOutLoud
- ③ Separate and Stand Alone
 - Free Natural Reader

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The screw driver, can opener and the knife

Beth Gatewood 12/10/10
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Kurzweil

- Benefit:**
 - eReader
 - Highlighting
 - Outline extraction
 - Dictionary Lookup
 - Study Guide Creation
- Requires:**
 - Kurzweil
 - Format PDF (1K version)

eReaders

- Benefit:**
 - Text-to-Speech
 - Modulate reading speed
- Requires:**
 - Specific formats
 - Can format bookshare.org books

Mac

- Benefit:**
 - Highlight anything on screen for TTS
 - Integration of work

Audio

- Benefit:**
 - Human Voice
 - Many books are available for free at Bookshare.org
- Requires:**
 - H.W.A. D.M. -listen at computer
 - H.W.A. device
 - [Spss Clip]

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Getting Started

- Investigate what you already have
 - YouTube
 - Search the Web
 - For example: (" enable text-to-speech Word 2013")
- Decide what you want to read
- Think about where you want to read
- Just try one thing

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Simple things to get you started

- Windows
 - Chrome + SpeakIt
 - Free Natural Reader
- Mac
 - Turning on the system preferences
- Kindle or an iPad

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Honorable Mention

- Bookshare.org


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Bonus Material.....

More about getting electronic text

- Bookscan.us
- Prizmo app 
 - Text-to-Speech based on a photo
 - Useful:
 - Word problems
 - Filling out forms
 - Last minute assignments that you can not immediately get eText

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Prizmo App

Picture with iPhone

Prizmo app can read text

Prizmo converts picture to text

16. **Cross-Country Runners Problem** Art and Bob are cross-country runners. Art starts running at 200 meters per minute. Three minutes later, Bob starts from the same point, going in the same direction at 215 meters per minute.

a. Draw a diagram showing the starting point, Art, and Bob, with Art farther from the start than Bob.

b. How far has Art gone in x minutes? Write this expression on your diagram from part (a).

c. How far has Bob gone when Art has been running for x minutes? Write this expression on your diagram from part (a).

d. If they keep running at the same rates, will Bob have overtook Art before x is 30? Justify your answer.

17. **Skipped Problem** Ann Adkins throws the shot with an initial upward velocity of 7 meters per second.

a. How high is it above where she threw it after 0.4 seconds?

b. When will it hit the ground, 1.3 meters below where she threw it?

18. **Weighted Average Problem** Nita B. Topaz has an average of 75 for the semester so far, before her semester exam. She knows that her final grade will be 80% of this average, plus 20% of the semester "raw" grade ("80% of ..." means "0.8 times ...").

a. Define a variable for Nita's exam grade. Then write an expression for her final grade.

b. If Nita makes 90 on her exam, what will be her final grade?

c. What does Nita need to make on the exam to have a final grade

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Thank you!

- Thank you for your attention!
- Fernette and Brock Eide
- Dr. Nicole Swedberg
- My dyslexic students
- My family
- References on Text-to-Speech Research:
 - Nice Overview at CAST
 - http://aim.cast.org/learn/research/aimresearch/sr_text-to-speech

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