

Auditory vs. Visual Modalities

- Joint Attention in Language Learning
 - Requires the child to attend to both the linguistic input and the appropriate event being described
 - For written language, the linguistic input and the appropriate event being described are usually visual
 - This might be more difficult than when the linguistic input is speech

Class Participation

- List of Contributions
- Extenuating Circumstances
- Email as doc file by Thursday June 6

Auditory vs. Visual Modalities

- However,
 - Speech also has visual components
 - The child will often look at face or gesture of the talker to process the linguistic input
 - Joint Attention is also demanding when the linguistic input is speech and the appropriate event is visual
 - “Finally, the notion that visual communication requires more “attention” than vocal language ignores the fact that auditory attention is also important, and is occupied by speech.” Fitch, W. T. The evolution of language. Cambridge: Cambridge University Press, p. 445
- Proof of concept
 - Sign Language is a visual language that is learned

Auditory vs. Visual Modalities

- Temporal Resolution
 - Backward Masking
 - Temporal Asynchrony Discrimination
 - Counting Successive items
 - Audition > Vision = Touch
 - RSVP does just fine at fast rates

Experts at Reading

- a few hours a day, at about
 - 250 words per minute
 - 30,000 words
 - 150,000 letters (assuming 5 letters per word)
- 25 years, reading 2 hours a day
 - 1.4 billion letters.

Perceiving Spoken and Written Language

- Comprehension Under Different Presentation Rates
 - Similar in the two modalities
- Working Memory
- Speech vs. Sign
 - Sign delivered at a slower rate
 - But Sign has more dense content
 - Interpreters do just fine
- Written Language
 - Could be presented at slower rate
 - RSVP does just fine at fast rates

A Cognitive Niche for Written Language

- Cognitive Niche
 - Expands capacity (pencil and paper)
- Sheeba and Sarah
 - Two plates differing in amount of food
 - Sarah gets the one Sheeba points at
 - Sheeba points at larger amount
 - Cover plates with numbers
 - Sheeba now picks smaller one
- Written text might give kids similar heads up since speech is evanescent



Change of Heart

- Overcome Confirmation Bias
- Behavioral Science
- Technology Development

- Behavioral science and technology could empower preschool children to learn to read naturally without instruction

Current Science

- Language Acquisition
 - Focus on Spoken Language
 - Clark. E. (2009) First Language Acquisition. Cambridge University Press
 - No index term for Reading
- Research
 - written word recognition necessarily follows spoken word recognition
 - Grigorenko and Naples (2008)
 - **Single-Word Reading: Behavioral and Biological Perspectives (New Directions in Communication Disorders Research by Elena L. Grigorenko and Adam J. Naples (Aug 24, 2007)**

Resistance to TARA

- “The force of inertia...is one of the great artisans of history.”
 - Fernand Braudel, *The Structures of Everyday Life: The Limits of the Possible*, , *Civilization and Capitalism 15th to 18th Century*, volume one, translated by Sian Reynolds (Berkeley: University of California Press, 1992), p.561.

Knee Jerk Reactions to TARA

- “Reading requires instruction”
 - No structure in writing
 - Must have speech first
- “Kids learn to read without TARA.”
- “Won’t help poor kids.”
 - Cost of Technology

Take Home Message

- Spoken Language Not Special
 - Multi-sensory Pattern Recognition
- Written Language Within Easy Reach
 - Just Start Early
- Disruptive Technology
 - Can Make the World a Better Place

Embodying Literacy

- Alphabet
 - Seeing
 - Hearing
 - Touching



A B C D E F G H I J K L M N O P

5



Q R S and T U V Dou-ble U X Y and Z

9



Now I know my A B Cs, won't you sing a - long with me?
next time won't you sing with me?



Sing the Alphabet Song

- * point to the letters of the alphabet as children sing.
- * vary the speed of singing
- * sing the alphabet backwards
- * stop singing ask, “What letter did I stop on?”

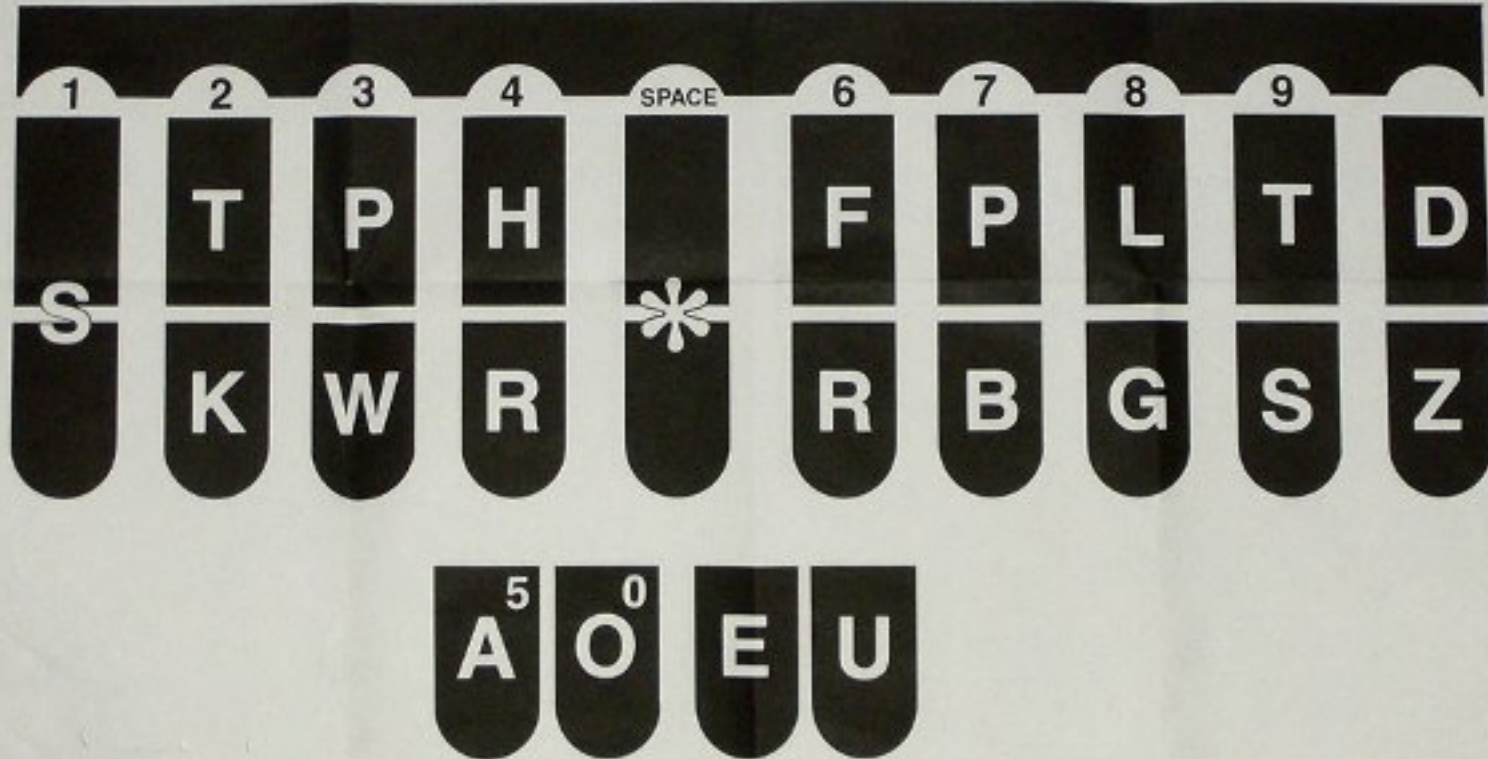


Vtech Alphabet Apple \$20





STENOGRAPH® SHORTHAND MACHINE KEYBOARD CHART



Single Press Types Complete Word

Left Hand Beginning; Right Hand End

250 Words/Minutes

Augmentative and Alternative Communication (ACC)

- communication methods used to supplement or replace speech
- 60 Minutes Coverage
 - <http://www.cbsnews.com/video/watch/?id=7414970n>





"We'd now like to open the floor to shorter speeches disguised as questions."