Speechreading (Lipreading)

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June 2010
Topics

- Demonstration
- Terminology
- Elements of the communication context (a model)
- Factors that influence success
  - Contextual constraints
- Strategies to enhance success
- The importance of listening and lipreading together
- True/false quiz about speechreading
- Cued Speech
- True/false quiz about CS
Lipreading Exercise

- First try
Lipreading Exercise

- Second try – With context
Lipreading Exercise

1. The **boy** threw the **ball** over the **fence**.
2. The **mailman delivered** a **letter** to my **house**.
3. The **inspection** **surprised** the **school nurse**.
FORD TO CITY: DROP DEAD
Vows He’ll Veto Any Bail-Out
Abe, Carey Rip Stand
Stocks Skid, Dow Down 12
Lipreading Exercise

4. The publication excited outrageous comments.
Terminology

- **Lipreading** means: Recognizing speech, with only visual cues from the face (primarily the mouth, lips, teeth, and tongue).

- **Speechreading** means: Recognizing speech using auditory and visual cues, and all contextual cues (including environmental cues).
Elements of the communication context

Environment
Talker
Message
Listener/speechreader
Factors that influence success

- Environment
  - Noise
  - Relevance to the message

- Talker
  - Articulation, accent
  - Voice level
  - Facial expression and vocal expression
  - Flexibility (ability to match the lipreader’s needs)

- Message
  - Language level
  - Topic familiarity
  - Grammatical complexity
  - Context
Contextual constraints

Phonological
- Example: \( p + [?] + t \)

Semantic
- Example: Fish breathe through their ________. [gills elbows]
  I heard about the __________. [??]

Syntactic
- Example: The glass combed the tissues under the sharp ocean.
  He blue ran.

Topical
- Example: At a soccer game – “That player was off-sides!”
  “That player missed the serve!”

Pragmatic
- Example: Child to mother -- “Mommy, may I please have $5?
  Student to teacher – “You're ugly!”
Today, we have visitors ______ Viet Nam and the ______. Our visitors are teachers. ______ want to help deaf ______. They will stay in ______ for one month. They ______ learning a lot of ______ information.
Today, we have visitors from Viet Nam and the Philippines. Our visitors are teachers. They want to help deaf people. They will stay in Rochester for one month. They are learning a lot of new information.
Listener/speechreader

- World knowledge
- Language and vocabulary knowledge
- Vision
- Attention
- Experience with lipreading
- Ability to give good feedback
- Guessing strategies, mental agility
- Flexibility (ability to revise)
Enhance the environment

- Stand where all students have a good, close view (about 6 feet is best)
  - Arrange chairs in a semicircle around you
- Move away from the window so light shines on your face
  - Do not stand where you have a shadow on your face
- Stand where the light is not in your students' eyes
- Reduce room noise
  - No children talking or scuffling around
  - Close the door to the hall
  - Turn off projectors that have a loud fan
- Use an assistive listening device (FM transmitter)
Present a clear signal

- Use appropriate facial expression and gesture
- Speak with clear articulation
  - Slightly slower rate
  - No exaggerated articulation
  - Pause between phrases and sentences (to avoid fatigue)
- Keep your head straight
- Provide a full-face view for a good viewing angle
- Keep your hair off your face
- Keep your hand, pencil away from your face and mouth
- Check students
  - Wearing their hearing aids, cochlear implants, and/or FM systems?
  - Wearing eyeglasses, if needed?
Enhance the message

- Announce the topic first
  - Example: Write a “headline” on the board
  - Write keywords

- Provide context
  - Example: For “Elections,” show a photo of the polling place from the newspaper

- Break up long sentences
  - Example: Orville and Wilbur Wright had a bicycle-making business in Ohio and they loved experimenting with flying machines, so they built the Wright Flyer in 1903.

  Orville and Wilbur Wright had a bicycle-making business in Ohio.
  They loved experimenting with flying machines.
  In 1903, they built the Wright Flyer.
Simplify the syntax (grammar)

Example: Broccoli, which people often leave uneaten, is very nutritious. Often, people do not eat their broccoli. However, broccoli is very nutritious.

Allow the grammar to provide contextual cues

Example: The dog was chased by the cat. The cat chased the dog.

Use words familiar to your grade level

Example: Imposter vs. A person who tries to fool you.

Choose words that have high visibility

Example: Parents vs. Mother and father
Increase the speechreader’s skills

- **Improve student’s skills** in these areas:
  - World knowledge
  - Language and vocabulary knowledge
  - Vision
  - Attention
  - Experience with lipreading
  - Ability to give good feedback
  - Guessing strategies, mental agility
  - Flexibility (ability to revise)
Feedback

- Ineffective strategies
  - Disregard the utterance
    - Speechreader may decide that it's not important enough to pursue any further
  - Bluff
    - Student may nod, smile, and pretend to understand

- Useful repair strategies
  - Nonspecific strategy
    - “What?” “Huh?”
    - “Please repeat more slowly.”
    - “Please repeat more clearly.”
    - “Please repeat a key word, using your best pronunciation. Then say the sentence again.”
    - “Please show me what you mean.”
  - Specific strategy
Specific repair strategies

- Teacher: Where is your history book?
- Child: Where is my *what* book?
  - Request a specific portion of the message
  - Indicate which parts were received OK

- Child 1: Can you give me a ride to hockey practice tomorrow?
- Child 2: I didn’t hear that clearly. Are you asking about *hockey*?
  - Confirm the topic
Today, we have visitors ______ Viet Nam and the ______. Our visitors are teachers. ______ want to help deaf ______. They will stay in ______ for one month. They ______ learning a lot of ______ information.

- How to make Cloze exercises

Add listening

- Each channel (auditory and visual) is important
  - There are some unique cues in each channel
  - There are some overlapping cues (redundant information)
  - Speechreading alone can be difficult
  - Listening alone can be difficult
  - Combining listening and lipreading makes communication easier
    - Less tiring
    - Removes ambiguity
    - Clarifies confusable speech elements
    - Enhances perception
Even with minimal auditory information, the speechreader can extract suprasegmental patterns

- Provides information about the pattern of speech
  - Syllabic structure and word boundaries
  - Syntax (e.g., question or statement)
  - Semantics (through stress patterns)
  - Some information about individual speech segments (whether a consonant is voiced or voiceless)

The voice and the face modify the message

- Facial expression (ex., a raised eyebrow)
- Tone of voice (ex., surprise, sympathy)
- Linguistic cues (ex., rising intonation signals a question)
Speechreading provides information that depends on good high-frequency information.

- Place of articulation is difficult to hear
  [http://www.uiowa.edu/~acadtech/phonetics/english/frameset.html](http://www.uiowa.edu/~acadtech/phonetics/english/frameset.html)

- Speechreading fills in some of this place information.

- Speechreading allows the person to integrate visible cues (place of articulation) with audible cues (manner of articulation)

- The speechreader has a more complete signal
True or False?

1. Lipreading is so difficult, it’s not even worth trying.  
   False

2. Lipreading cannot be taught.  
   False

3. The skills of the lipreader are critical -- more important than the skills of the talker.  
   False

4. You need 20/20 vision to lipread.  
   False

5. “Mom” and “pop” are the same through speechreading for a person with severe hearing loss.  
   False

6. “Mom” and “pop” are the same through speechreading for a person with severe hearing loss with a profound hearing loss.  
   Depends on the individual
Cued Speech

- CS is a mode of communication to make the elements of speech visible
  - Natural mouth movements
  - Hand cues
  - Together, hand cues and mouth movements make each speech sound unique
- Each language has a different set of handshapes
- CS is useful for several applications
  - Can be used from infancy
  - Can be useful in autism, cerebral palsy, developmental disability
- CS has lead to improved speech, language, and literacy skills
- Demonstration
  - http://www.cuespeech.org/
Handshapes

Handshape 1 /d, p, zh/ deep treasure

Handshape 2 /TH, k, v, z/ the caves

Handshape 3 /s, h, r/ sea horse

Handshape 4 /wh, b, n/ white bone

Handshape 5 /m, t, l/ & vowel alone my taffy

Handshape 6 /w, sh, l/ wet shell

Handshape 7 /th, j, g/ thin jogger

Handshape 8 /y, ng, ch/ young child

Hand placements

Mouth /ee, ur/ leisure

Chin /aw, ue, e/ tall blue tent

Throat /oo, i, a/ Look, big crabs!

Side consonant alone

Side Forward /oe, ah/ boat dock

Side Down /uh/ sun

Chin to 5 Throat /oi, ay/ moist snails

Side to 5 Throat /ie, ou/ light house
Cued Speech

- Cued Speech requires the use of voice to communicate clearly.  
  - *False*

- CS was developed for the purpose of improving a deaf person's speech skills.  
  - *False*

- The handshapes and hand placements in CS are the same across all languages.  
  - *False*

- You can't cue to babies.  
  - *False*
Review

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