

*Cued Speech for Infants &
Young Children with
Deafness or Hearing Loss
and Their Families*

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- Past President, NCSA
- Executive Director, NCSA
- Parent of a deaf native cuer
- NCSA Certified Instructor of Cued Speech
- Cued Language Transliterater, 11 years
- Author – Widely Published on deaf education/CS
- BA in Journalism, University of MD
- MA in Jewish Studies, Touro College
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- Director of Deaf Services at Alexander Graham Bell Montessori School-AEHI near Chicago
- Raised orally by hearing parents, began signing in late elementary school, used an ASL interpreter through college, began learning Cued Speech in 2011
- NCSA Board Member, Regional Director for the Great Lakes Region
- Illinois Hands and Voices Board Member
- BA in Elementary Ed, Deaf Ed, and Special Ed
- MA in Early Childhood Special Ed

Agenda

- Introductions
- Research
- CS: What and Why?
- How Language Develops
- Case Study
- Native Cuers Today
- A Taste of Cueing
- Myths & Facts
- Resources

Reference Article

- Marschark, M. 2001. *Language development in children who are deaf: A research synthesis*. Alexandria, VA: National Association of State Directors of Special Education. ERIC ED 455 - 620.

Facts about Children who are Deaf or Hard of Hearing

(Marschark)

- About 90% born to hearing parents
- Language development depends on frequent, consistent, and accessible communication

Language Development (Marschark)

- Early interactions establish the foundation upon which language develops
- Sign language and spoken language should be considered complementary strategies for encouraging language development in deaf children
- Total Communication programs (utilizing simultaneous spoken and signed language) have not successfully improved literacy

Of 18-year old deaf students leaving high school... (Marschark)

- Less than half have reached a fifth grade level in reading and writing skills
 - (Traxler, 2000)
- Over 30 percent leave school functionally illiterate
 - (*Waters & Language Development in Children Who Are Deaf: A Research Synthesis* Page 33 Project FORUM at NASDSE June 4, 2001 Doehring, 1990).

ASL & English

(Marschark)

- ASL vocabulary and syntax do not parallel those of printed English.
- Children need to have experience with English in order to be able to read and write.

Parents need...

(Marschark)

- to model fluent language to their children.
- to understand the importance of reading with their young children.
- to be taught to use visual strategies for enhancing communication.

From Marschark's Footnotes

- Research shows deaf children who are exposed to Cued Speech from an early age show impressive performance in a variety of reading sub-skills.
- Cueing at home and at school maximizes the potential of the deaf or hard of hearing child.

Is Reading Different for Deaf Individuals?

“For the purpose of learning to read, children must have an age-appropriate level of proficiency *in the same language that is to be read and written.*”

Mayer, C., & Trezek, B. J. (2014). Is reading different for deaf individuals? Reexamining the role of phonology. *American Annals of the Deaf*, 159(4), 359–371.

The Role of Phonology

“a core difficulty in learning to read manifests itself as a deficiency....in mastering phonological awareness skills”

Mayer, C., & Trezek, B. J. (2014). Is reading different for deaf individuals? Reexamining the role of phonology. *American Annals of the Deaf*, 159(4), 359–371.

The Role of Phonology

“Early exposure to a communication system that makes the phonological aspects of the language accessible (i.e., Cued Speech) results in age-appropriate skill development in the areas of phonological awareness, reading, and spelling, although not necessarily vocabulary.”

Mayer, C., & Trezek, B. J. (2014). Is reading different for deaf individuals? Reexamining the role of phonology. *American Annals of the Deaf*, 159(4), 359–371.

Is Reading Different for Deaf Individuals?

Mayer and Trezek conclude NO.

“phonology is an aspect of language acquisition....that provides the platform....for learning to read. It is these phonological skills that allow the reader to make the connections between “through-the-air” language and the print on the page....”

Mayer, C., & Trezek, B. J. (2014). Is reading different for deaf individuals? Reexamining the role of phonology. *American Annals of the Deaf*, 159(4), 359–371.

Why was Cued Speech Developed?

- Dr. R. Orin Cornett was surprised by poor reading levels of deaf students at Gallaudet in 1965.
 - Entering freshmen had average of 4th grade reading level
 - After 5 years of English classes, average student graduated with the same reading level
 - If deaf students can't read, how are they getting information?

The Path to CS



- Cornett became Vice President of Long Range Planning at Gallaudet, fall of 1965
 - 1/3 of time devoted to research on how to improve literacy skills
- Cornett sought to develop a way to visually convey the language used for reading and writing using one hand and the mouth

Cornett's Thoughts...

- “If all the phonemes of speech looked clearly different from each other on the speaker’s mouth, just as they sound different from each other to normal ears, a profoundly deaf child could learn language through vision almost as easily as the normal child learns it from hearing.”

Cornett's Thoughts...

- English should be learned as a spoken language & used in daily communication with deaf child (assuming hearing parents)
- Information visible on mouth must be an indispensable component
- Supporting elements must be produced at the speed of speech. They should contain only the phonemic and syllabic information.

Cued Speech

- Must aid in speech and speech reading
- Must be a system that required minimum time to learn by hearing parents
- Must be feasible for very young, prelingually deaf children implemented solely through parents
- Must lift accuracy of communication



How Does Language Develop in Hearing Children?



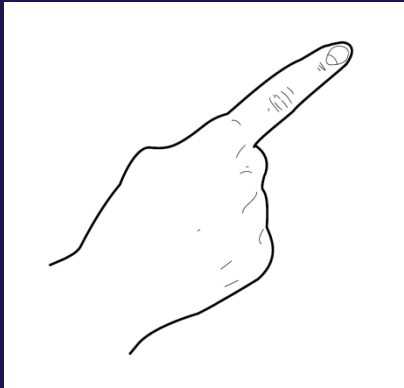
By spring of 1966 Cornett had developed Cued Speech.

- a phonemically based mode of communication used to make a traditionally spoken language visually accessible
- closed system of handshapes, placements, and mouth movements

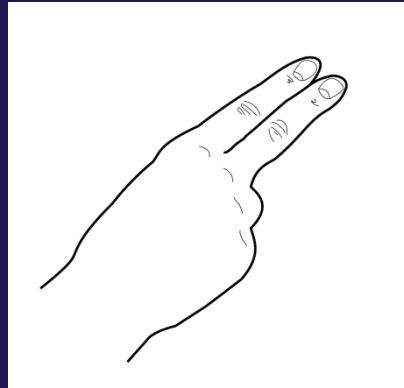
Cued Speech

- 43 Phonemes in English
- Disambiguates Lip reading
- Validates Auditory Skills
- Reinforces Speech Skills
- Makes Language clear through vision alone

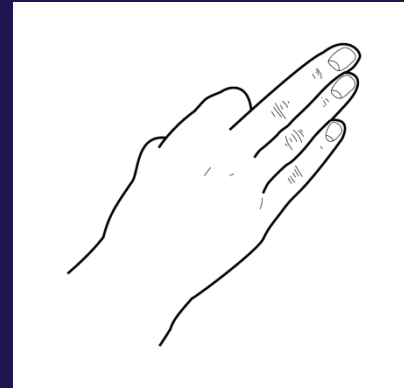
Consonant Handshapes



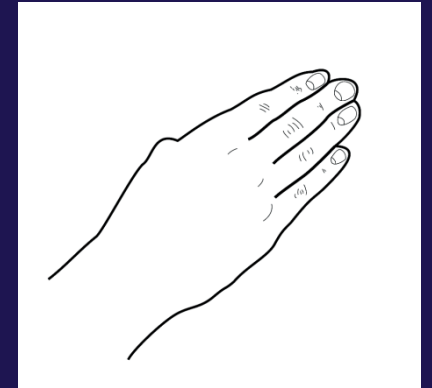
/p, d, zh/



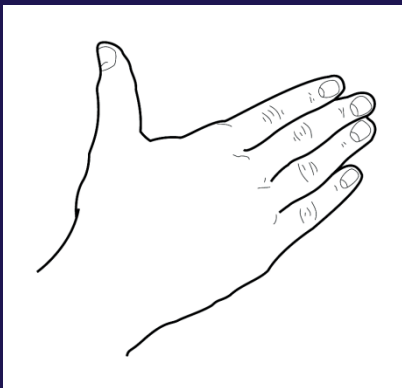
/k, v, TH, z/



/h, r, s/

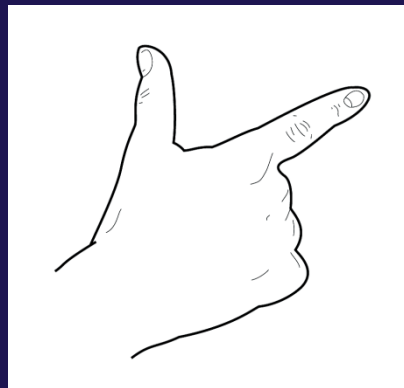


/b, n, wh/

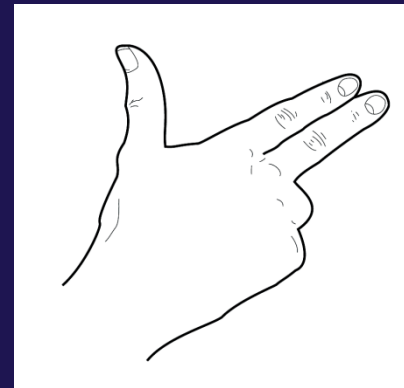


/m, t, f/

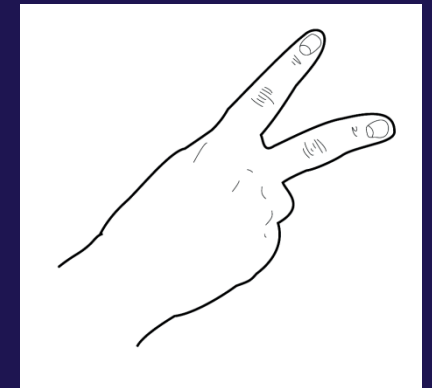
no consonant



/w, l, sh/

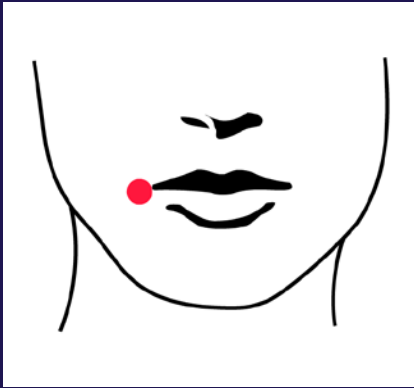


/j, g, th/

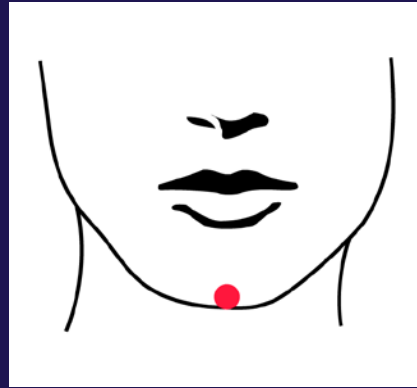


/y, ng, ch/

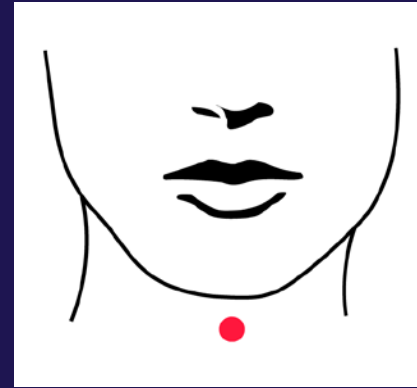
Vowel Placements/Movements



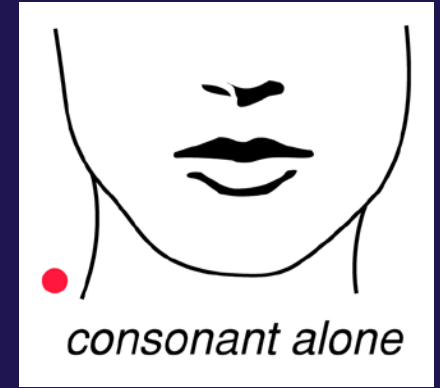
/ur, ee/



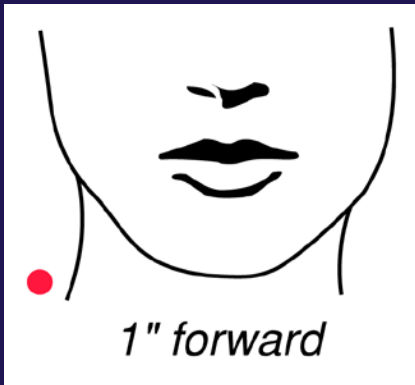
/ue, aw, e/



/i, a, oo/

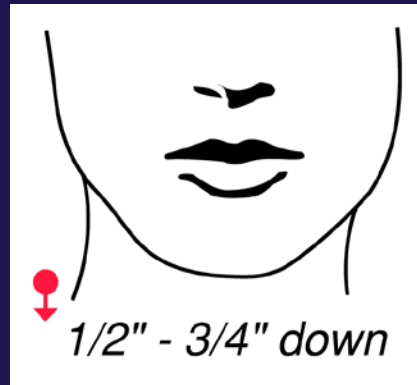


consonant alone



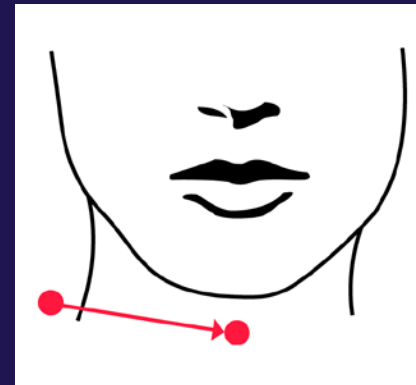
1" forward

/oe, ah/

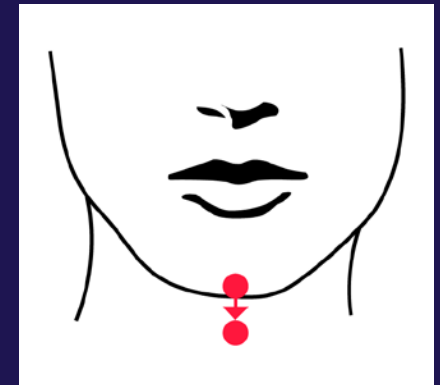


1/2" - 3/4" down

/uh/



/ou, ie/



/ay, oi/

Is Cued Speech a language?

No. Cued Speech is not a language.

- Visually conveys the phonemic stream of a traditionally spoken language – such as English
 - Sequence of consonants and vowels
- Can provide visual access in the language of the home for deaf children

English Vocabulary

- **There are about 250,000 words in a standard unabridged English dictionary.**
- **About 50-75,000 are considered to be basic words, and the rest are derivations and inflections of basic words.**
- **The receptive vocabulary of the average 6-year-old hearing child is 25,000 words**
- **There are an estimated 5,000 commonly used signs in ASL.**

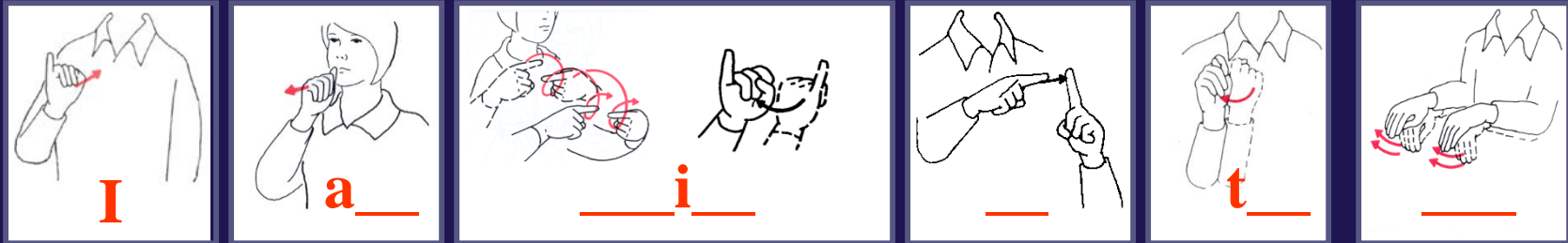
Source: Doenges, K. S., & Kylo, K. L. (2001). *Cued English: A bridge to literacy for deaf and hard of hearing children*. Presentation, Cue Camp Minnesota, 2001, St. John's University, Collegeville, MN.

English and ASL

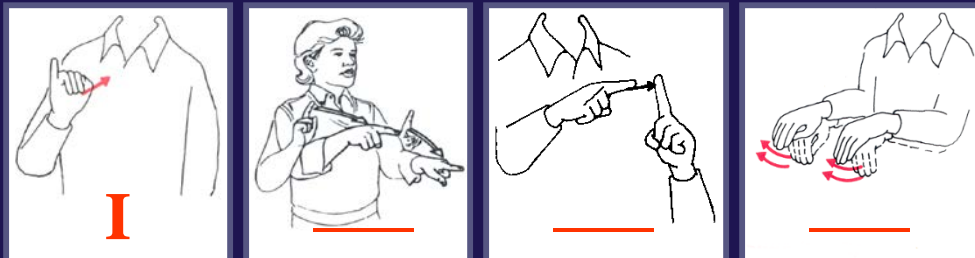
- ASL is a separate language with its own syntax and sentence structure
- No written form of ASL
- Cannot be used to convey English

I am going to the store.

Signing Exact English:

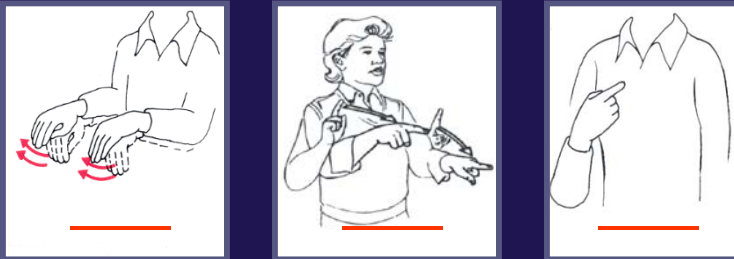


Pidgin Signed English:

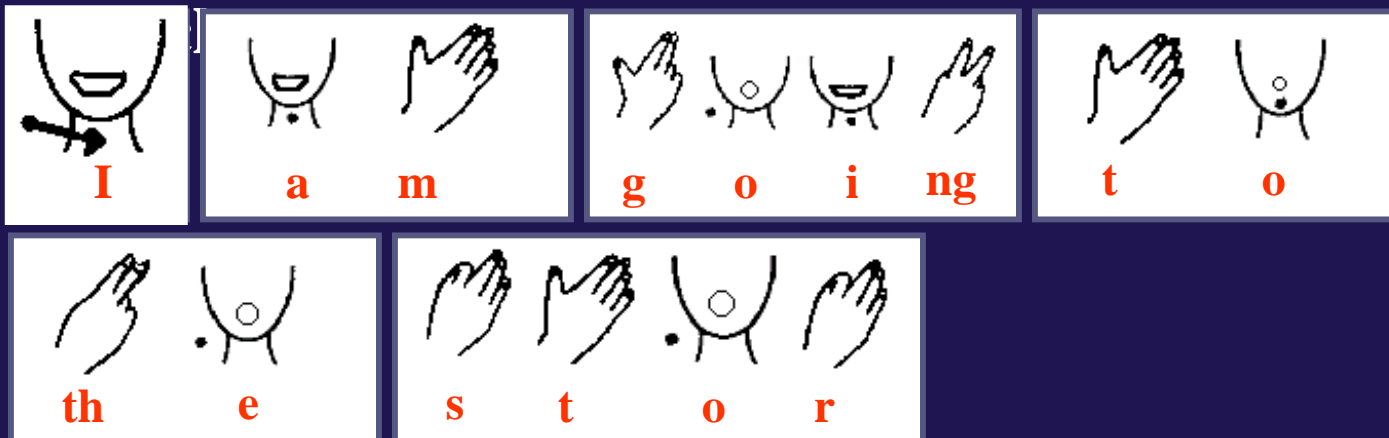


I am going to the store.

American Sign Language:



Cued English using the system of Cued



Elements of a Language

- Morphology
- Phonemes
- Semantics
- Syntax
- Pragmatics

What is a Phoneme?

Phonemes are the smallest unit of English (ie – consonant vowel). Cueing allows the deaf child full access to the phonemic code of English through vision alone.

(Doenges, 2003. *How Cued English Impacts Learning to Read and Write English for Deaf/Hard of Hearing Students*)

English Semantics

Historically:

deliberate, direct instruction pairing print with sign and/or speechreadable information. Print is often the first unambiguous visual access to English that the learner experiences.

With cueing:

precise English vocabulary is acquired through natural interaction with cuers of English long before print is introduced. Because you can cue any English word, d/hh learners acquire the same rich knowledge that hearing kids do.

MANUALLY CODED SIGNED SYSTEMS

**Do not convey the
C-V phonemic
structure of
English
completely.**

CUED ENGLISH

**Conveys the C-V
phonemic
structure of
English
completely and
visually in natural
interaction.**

WHAT LANGUAGES AND LANGUAGE MEDIUMS KEEP LINGUISTIC COMPONENTS INTACT?

<i><u>Linguistic Components</u></i>	<i><u>Signed ASL</u></i>	<i><u>Tactile ASL</u></i>	<i><u>Written English</u></i>	<i><u>Spoken English</u></i>	<i><u>Signed English Systems</u></i>	<i><u>Cued English</u></i>
<i>PHONOLOGY</i>	YES	YES	YES	YES	NO	YES
<i>MORPHOLOGY</i>	YES	YES	YES	YES	NO	YES
<i>SYNTAX</i>	YES	YES	YES	YES	YES?	YES
<i>SEMANTICS</i>	YES	YES	YES	YES	YES	YES
<i>PRAGMATICS</i>	YES	YES	YES	YES	YES	YES

Cue Kids Learn

Multiple Languages

- Been adapted to over 67 languages and dialects

Accents

Pronunciation

English Vocabulary

- **Specificity**
- **Pronouns**
- **Synonyms**
- **Multiple meaning words**
- **Contractions**
- **Modals**
- **Idioms**

Does Cued Speech require any speech?

No. Requires mouth movements associated with speech.

- The mouth is half the message.
- Shows the pronunciation of words.
 - Chevy – /che, vee/ the actor Chevy Chase
 - Chevy – /she, vee/ nickname for a Chevrolet

Does Cued Speech require any hearing?

No, otherwise transliterators would not be effective.

- Can validate what is heard through assistive listening devices.
- Can provide a visual model of target during auditory training

Hearing parents use Cued Speech to...

- provide visual access to the language of the home.
- learn to communicate visually in a relatively short period of time.
 - Classes can teach the entire system in 12 – 15 hours
 - Fluency develops within a few months to a year

Children of Deaf parents can use Cued Speech to ...

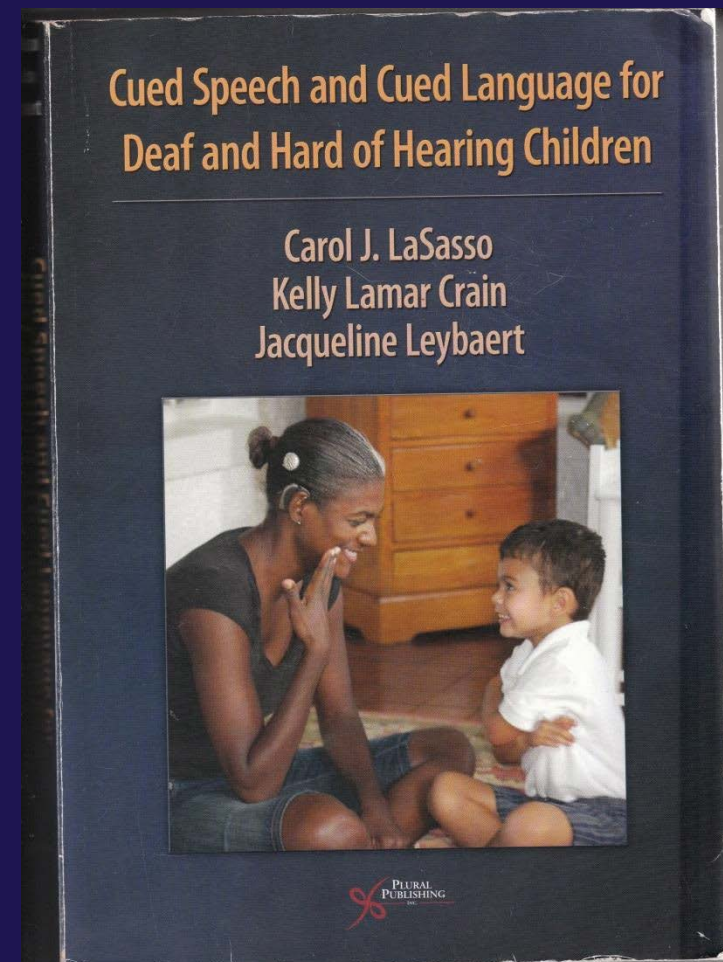
- learn English as a second visual language.
- manipulate the phonemic stream of English to develop phonemic awareness of the language they will learn to read and write.

Parents of children with other language learning disabilities can cue to...

- provide visual and kinesthetic model of language.
- prompt/elicit an utterance.
- draw attention to the face and mouth for communication.
- demonstrate difference between incorrect & correct pronunciation/articulation.

Cued Speech and Cued Language for Deaf and Hard of Hearing Children

- Edited by: Carol LaSasso, Kelly Lamar Crain, & Jacqueline Leybaert
- Plural Publishing
- 2010



Deaf cuers...

- learn English naturally
- have a large vocabulary base
- learn to read in the same manner as hearing children
- learn foreign languages as easily as hearing children



Cuers meet or surpass hearing peers in linguistic competence.

Deaf cuers...



- do not rely solely on interpretation
- have an accurate phonological model of a spoken language
- have English skills which match their hearing peers

Cuers can access General Education programs with fewer supports than other deaf or hard of hearing students.

Reading Achievement of Deaf Students

- Children who are profoundly deaf and use Cued Speech score at the same level for reading achievement as normally hearing children.
- Carefully matched oral and total communication students scored significantly lower.

Wandel, Jean E. (1989) *Use of internal speech in reading by hearing-impaired students in oral, total communication, and Cued Speech programs*. New York: Teachers College, Columbia University, Doctoral Dissertation.

Phonological Awareness

- In hearing children, research shows:
 - Phonological abilities are correlated with subsequent reading achievement
 - Link is causal between some phonological tasks and reading achievement
- Cued Speech children have comparable phonological awareness skills.

Visual Speech in the Head

- Leybaert & Charlier (1996)
- Deaf children with early exposure to CS had skills like those of hearing peers
 - Rhyming, Memory, Reading, Spelling
- Deaf cueing pre-readers had better rhyming skills than hearing pre-readers

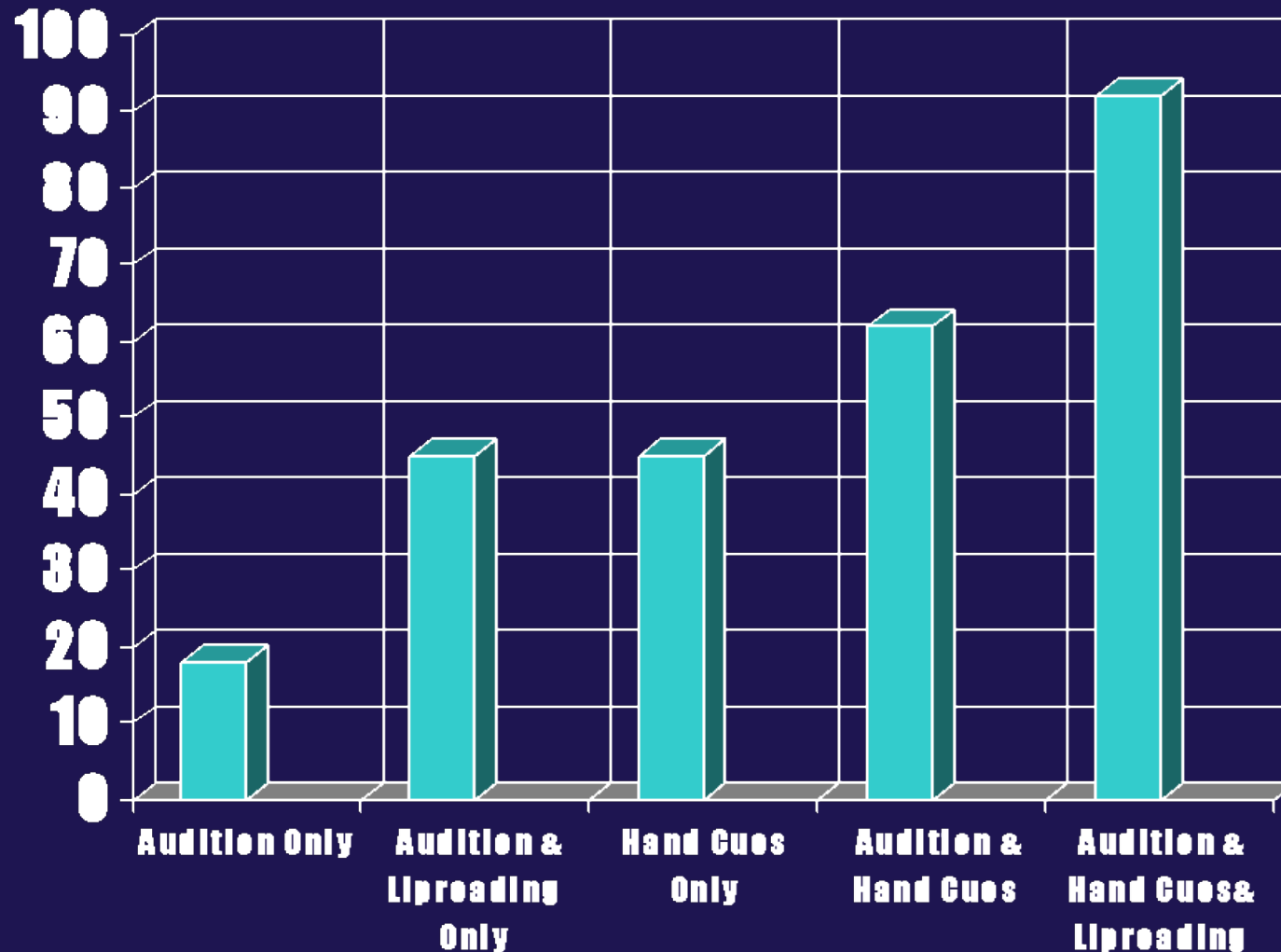
Journal of Deaf Studies & Deaf Education, 1(4), 234-48. *The Effect of Cued Speech on Rhyming, Remembering, and Spelling.*

Rhyme Generation in Deaf Students

- LaSasso et al. (2003)
- Hearing, Deaf cuers, and Deaf non-cuers (signing and oral) asked to generate rhymes for 54 words
- Cuers performed similarly to hearing peers (>90% correct total)

Journal of Deaf Studies & Deaf Education, 8(3), 250-270. *Rhyme generation in deaf students: The effect of exposure to Cued Speech*

Reception of Key Words (Nicholls)



Other Research

- Musgrove (1985)-CS helps hearing impaired children comprehend discourse
- O. Perrier, Charlier, et al (1987) - CS enables deaf children to understand spoken language better than with lipreading alone.
- H. Kaplan (1974) - A Doctoral Dissertation, University Of Maryland finds that CS significantly improved speechreading skills of prelingually deaf persons.
- Charlier & Paulisson (1986) - CS improves the audition and does not divert auditory attention of deaf children

Cued Speech Aids Development of Listening and Spoken Language

- Cued Speech provides complete visual access to the phonemic base of the language.
- Cuers know the target sounds for words.
- Children can learn to listen to the language they already know.

Cued Speech and Cochlear Implants: Powerful Partners

- Osberger (1997)
- Exposure to Cued Speech provided benefits pre- and post-implant as compared to other groups of children.
- Tested on awareness of sound and language development.

Osberger, M.(1997) *The Hearing Review*. , 4(10), 28-31. *Current issues in cochlear implants in children*

Cued Speech and Cochlear Implants: Powerful Partners

- Vieu, et al. (1998)
- All children improved in speech production and spoken syntax after implantation (oral, signing, cueing)
- Cued Speech group demonstrated more advanced syntax and language complexity than others.

Vieu, A. Et al .(1998) International Journal of Otorhinolaryngology, 44, 15-22. *Influence of communication mode on speech intelligibility and syntactic structure of sentences in profoundly hearing impaired French children implanted between 5 and 9 years of age.*

Deaf cuers are like deaf signers because...

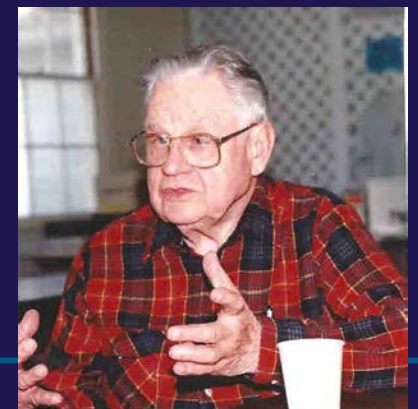
- They use a visual form of communication.
- Speech is not necessary for communication.
- The majority can sign fluently.
- They utilize many assistive devices.



Cuers can be a part of the Deaf Community.

Cued English and ASL

- Having a strong language base allows for acquisition of second language
 - Necessary to learn language from a native model
 - Necessary to have consistent exposure to and manipulation of each language



Breaking the Code:

unlocking the CUErriculum

Case Study

- Alexander Graham Bell Montessori School- AEHI in suburban Chicago
- All deaf/hh students are mainstreamed within a challenging Montessori classroom
- Related service providers include Teacher of the Deaf, Speech and Language Pathologist, and/or a Listening and Spoken Language Specialist

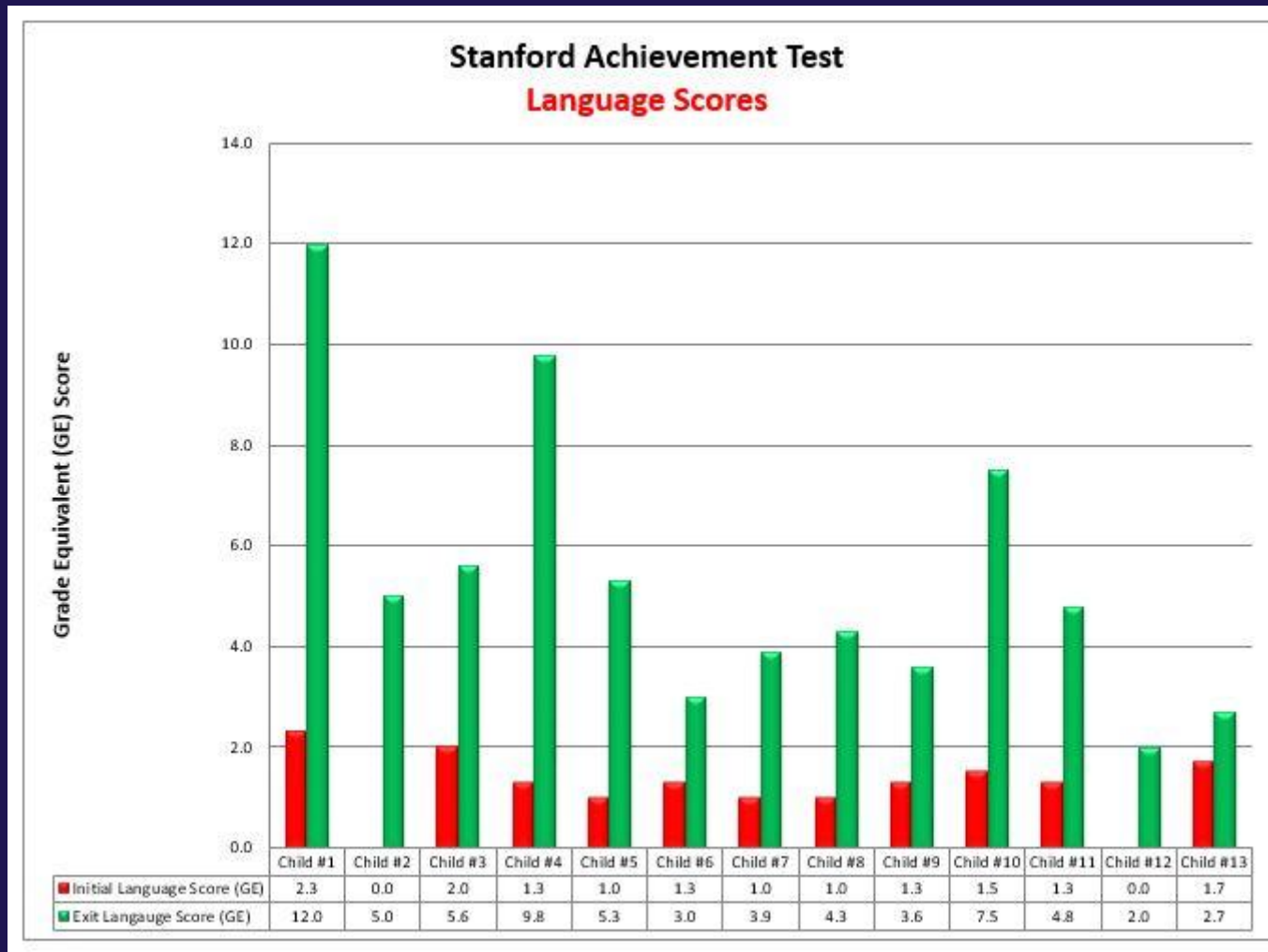
Case Study

- Cued Speech is used throughout the entire building by all staff to provide 100% visual access to language
- A total of 13 students in this study
- Students have varying hearing losses, assistive technology, and some have additional learning factors

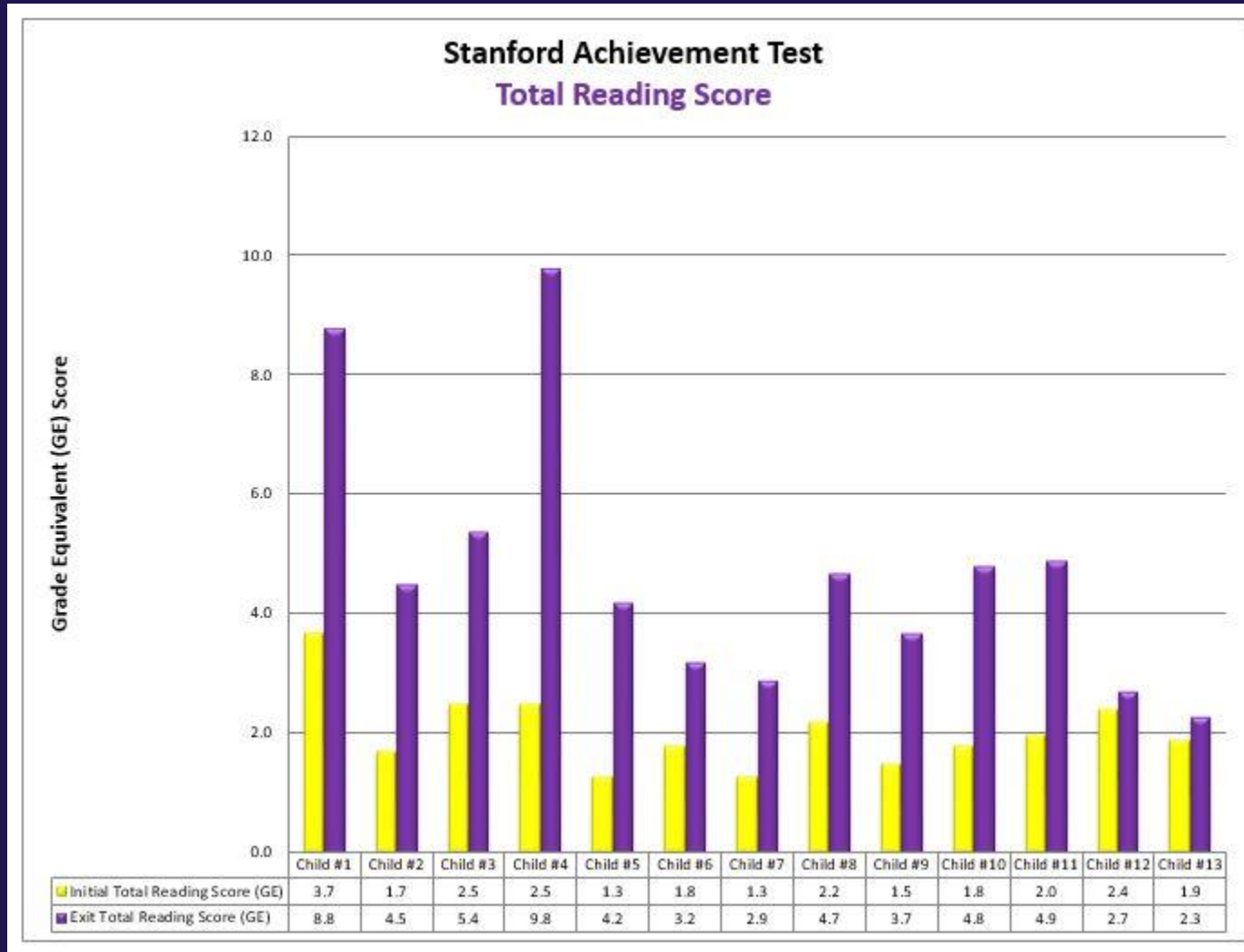
Case Study: Background

- Stanford Achievement Test administered to all students at the elementary level annually
- Compiled and graphed the initial test score and exit test score for the reading and language subtests as well as the complete battery test score

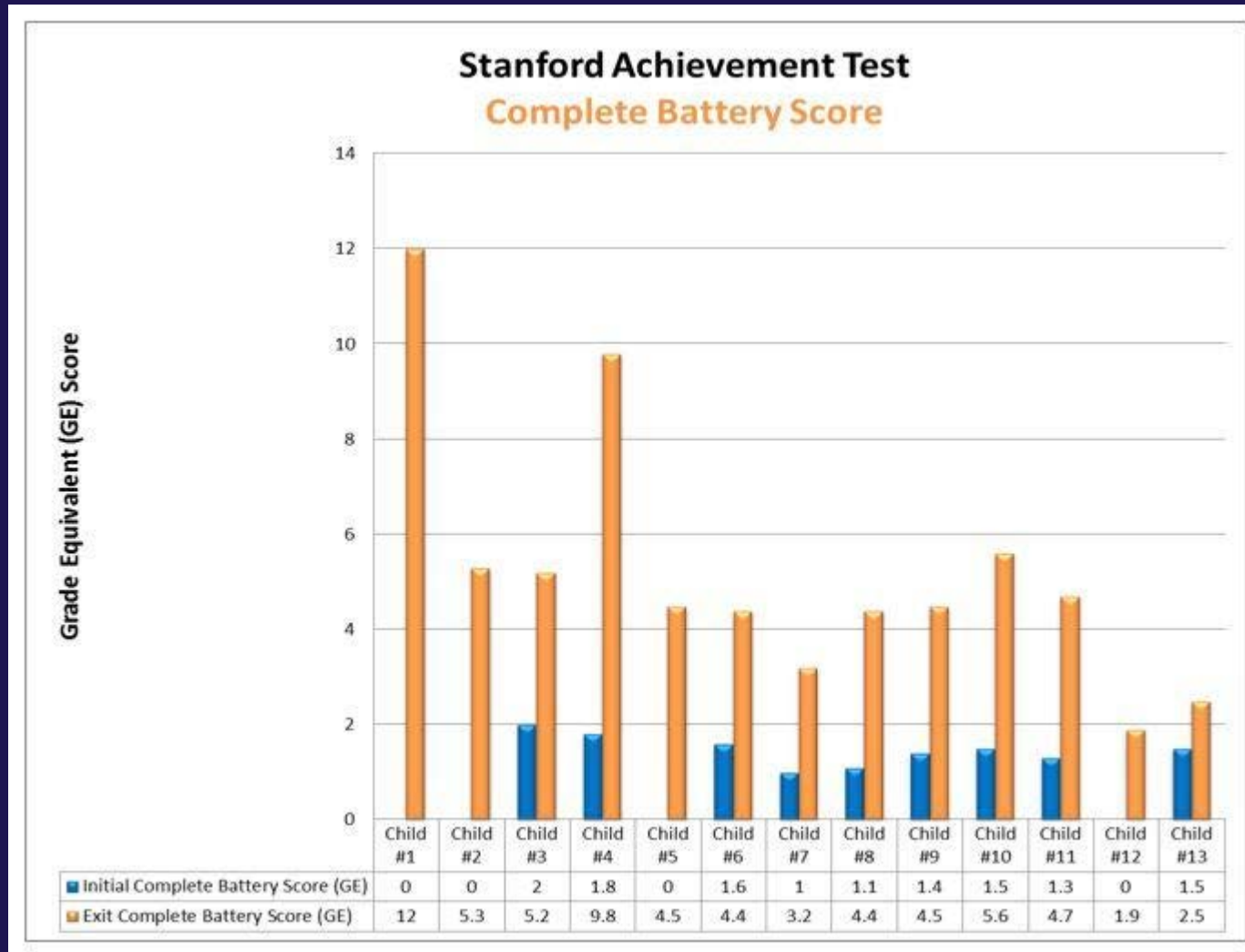
Case Study: Language Scores



Case Study: Reading Scores



Case Study: Complete Battery



Case Study: Summary

- Amount of time each student spent at AGBMS-AEHI varied
- Each student made gains
- Cued Speech impacted the acquisition of language, which enhances reading ability, which affects overall academic studies

Native Cuers

- Experiences Growing Up
- In the Mainstream
- Use of CLTs
- Family Communication

Adult Cuers today

- Good English skills
- Most know ASL and other languages
- Most finish college and have careers
- Cueing Community today
- Gallaudet/RIT
- Universities we attend
- Our careers

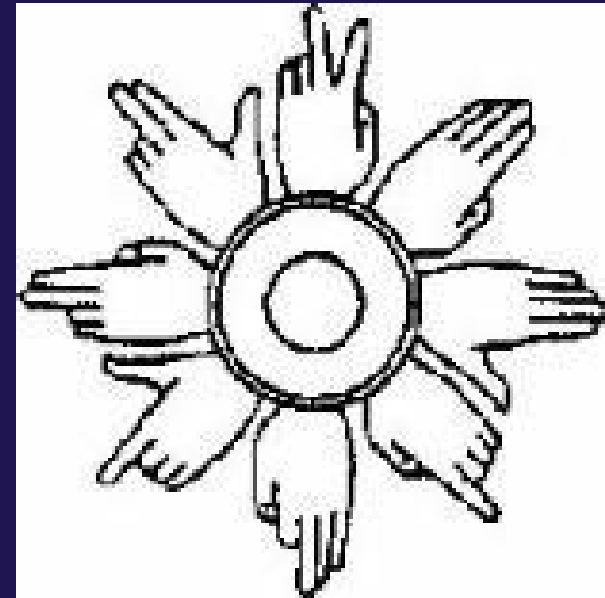
Questions?

Summary of Morning

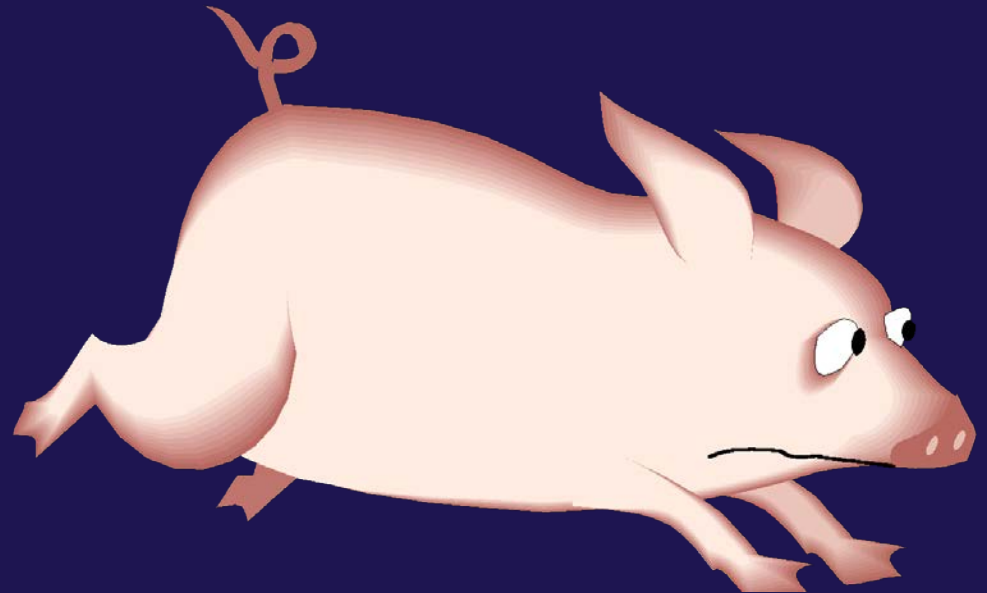
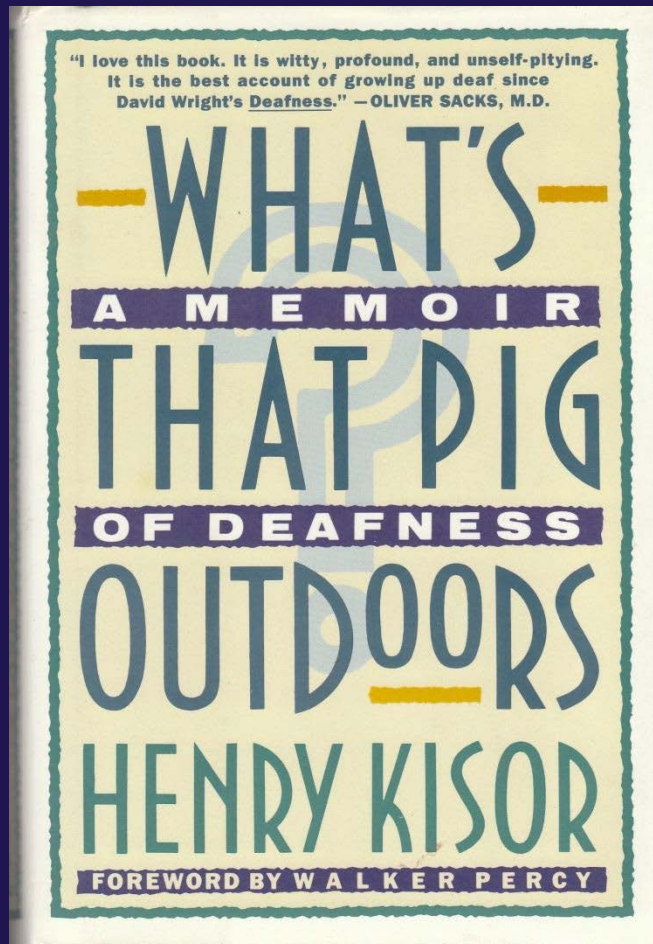
- Cued Speech:
 - provides visual access to traditionally spoken languages.
 - enables the development of a strong base language for communication and literacy.
 - facilitates listening and spoken language learning.
- Language of the home should be the first language of the child.
- Strong language base enables acquisition of additional languages.

Afternoon Session

A Taste of Cueing



What's That Pig Outdoors?



What's that ___ outdoors?

pig

big

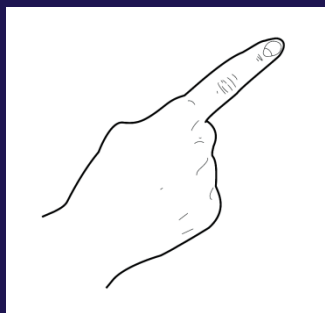
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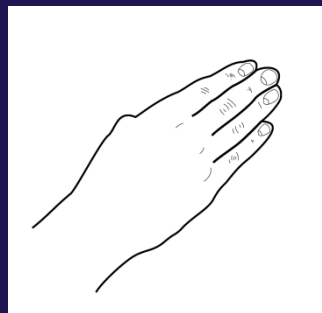
pug

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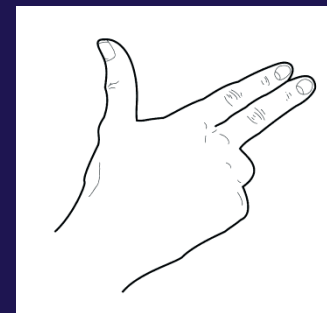
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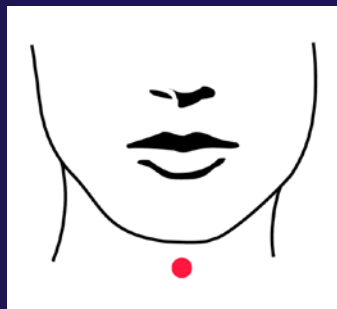
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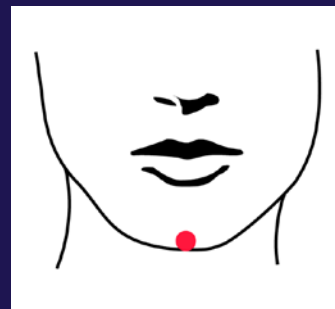
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/uh/



pig

big

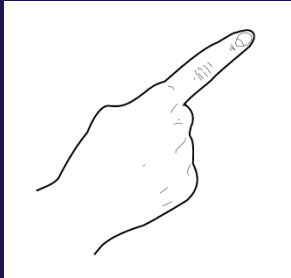
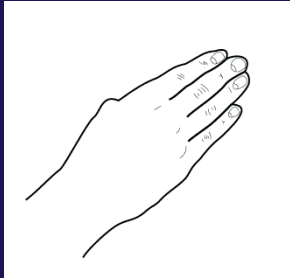
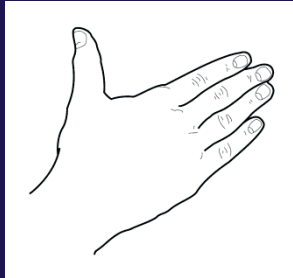
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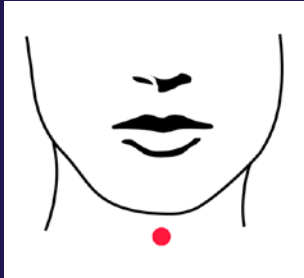
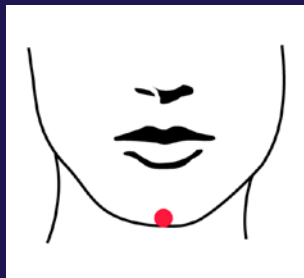
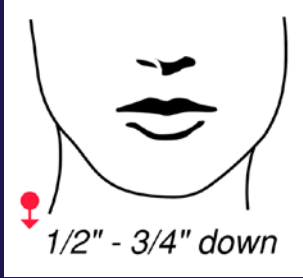
pug

bug

Mapping Phonemes with Cued Speech

Hand → Mouth ↓			
Lips together	p	b	m
Tongue behind teeth	d	n	t

Mapping Phonemes with Cued Speech

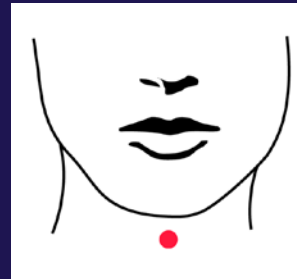
Placement →			
Mouth ↓			
Flat	i	e	uh
Open	a	aw	

Let's Learn to Cue

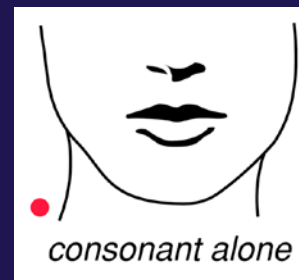
- Always cue in a consonant-vowel pair.
 - Place consonant handshape at vowel placement.
 - There is a handshape for “no consonant”.
 - There is a placement for “no vowel”.
- Synchronize mouth movements to cues.

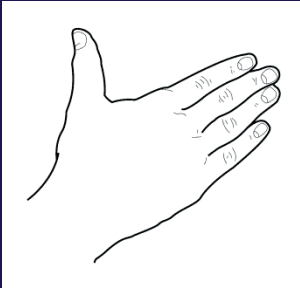
Let's cue "mat".

- Place handshape 5 at throat for /ma/



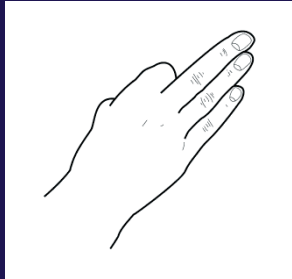
- Move handshape 5 to side for /t/





/m, f, t/ & no consonant

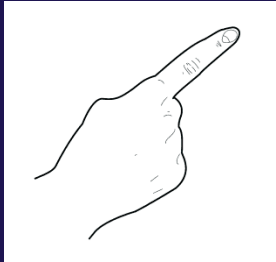
- Change first phoneme to show rhyming words:
 - *mat*
 - *fat*
 - *tat*
 - *at*
- What is different when you cue each of these words: *mat, fat, tat, at*?



/h, s, r/

- Change first cue to handshape to 3 at throat and cue:
 - *hat*
 - *sat*
 - *rat*

More words that rhyme with *mat...*



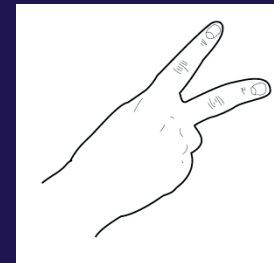
- Pat
- dat



- bat
- gnat



- cat
- vat
- that



- chat

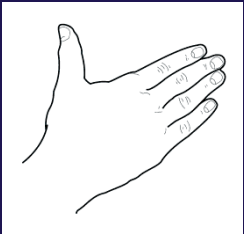
Let's cue some phrases

- Pat Matt.
- Pat sat.
- Matt sat.
- That gnat sat.

Ed

- Place handshape 5 on chin for /e/
- Move to handshape 1 at side for /d/

Words that rhyme with *Ed*



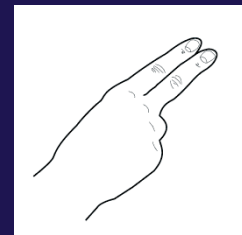
- Ted
- fed



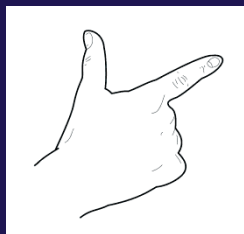
- red
- head
- said



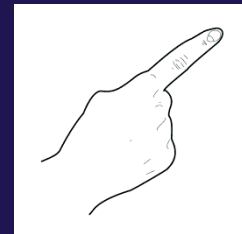
- Ned
- bed



- zed



- wed
- shed
- led



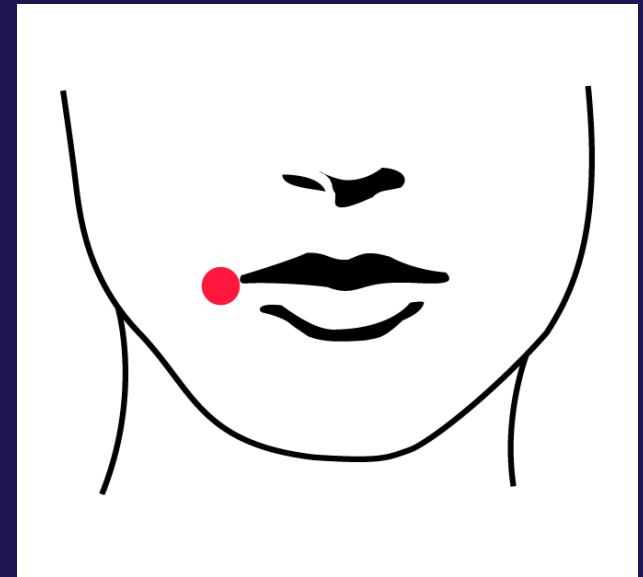
- dead

More Rhyming Phrases

- Redhead
- Ed fed Ted.
- Ned shed.

Ee and Er

Place your hand with the longest extended finger at the corner of your mouth to make the Ee and Er sounds.



Me and Meet

- Place handshape 5 on mouth for Me
- Move to handshape 5 to side for Meet

Sentences

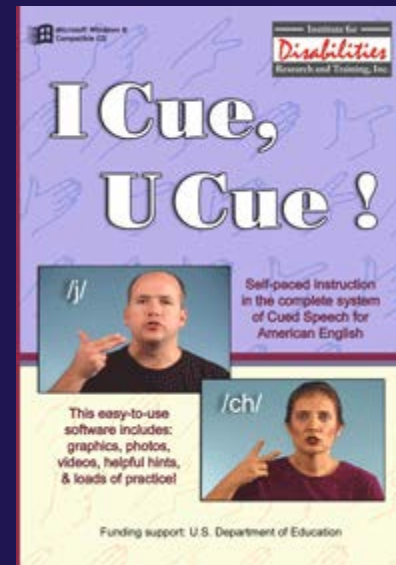
- He eats meat.
- Her feet hurt.

Cue these words

- Team
- Term
- Sir
- Her
- Fur
- Feet
- Turf
- He
- Heat

Media for Learning to Cue

- DVD set
- Computer Software



The First Step to Literacy is Knowing the Language

- To learn and internalize a language, children must *experience*, i.e. be “bathed” in the language.
- They must *practice* and *use* the language *in conversation*, i.e. “face-to-face.”
- They must have: repetition, consistency, frequency and intensity
- Children do not learn a language effectively through print only.

Strategies for Communication

- Use appropriate techniques to get child's attention before cueing.
- Make sure your hand and mouth are visible.
- Repeat, rephrase, and check for comprehension.
- Continually raise expectations for language (receptive and expressive).

Myth: Cued Speech = Speech

Fact: Cued Speech = Phonemes

- Does not require speech or voice to communicate clearly
- Mouth movements correlate to movements used for speech
- Hearing cuers often think in terms of speech sounds (phonemes)
- Deaf cuers think in terms of cued phonemes

Myth: You can't cue to babies.

Fact: You CAN cue to babies.

- Research shows you can cue, talk, and/or sign to babies.
- Cueing as early as possible maximizes opportunity for strong language development.



Myth: If you cue, a child won't learn to listen.

Fact: Cued Speech enables kids to learn to listen.

- Listening is easier than watching.
- Cuers have a visual model of spoken language.
- Able to anticipate number of sounds to listen for in order to match the visual model.
- Can fill in the blanks misheard in sentences because of strong language base.



Myth: If you cue, a child won't speak.
Fact: Cued Speech gives kids something to say.

- Cued Speech can facilitate/complement speech therapy.
- Cuers with minimal hearing require therapy to learn how to speak.
- Cuers have an internal model of the pronunciation of words.

Suggestions for Parents New to Cueing

- Cue as often as possible
- Read/cue books
- Play rhyming games & sing songs
- Focus on key phrases and words that you emphasize
- Use carrier phrases
 - It's time to...
 - Let's go to ...

Learning to Cue

- Face to face instruction is best.
- Camps are awesome for community and skill building.
 - Camp Cheerio, NC (May)
 - Cue Camp Friendship, MD (June)
 - Cue Camp New England (July)
 - Camp Chi-Cue-Go, IL (July)
 - Cue Camp Virginia, VA (September)
 - Check online for current schedule of camps
www.cuedspeech.org/cue-camps

Online support for learning to cue:

- Cue Charts: www.cuedspeech.org → Resources → Cue Charts
- Cue Tutor from CuedSpeech.com
- The Art of Cueing:
<http://cuedspeech.usf.edu/Art/>
- Gaining Cued Speech Proficiency by Walter Beaupre:
http://www.uri.edu/comm_service/cued_speech/
- Youtube.com – search Cued Speech

Cued Speech Materials available at NCSA BOOTH

- Information Papers
- DVD: *Insight into Cued Speech*

Regional Cued Speech Support

- The NCSA has regional directors listed on its web site
- www.cuedspeech.org/ncsa/board.php

Cueing Support

- National Cued Speech Association
Cuedspeech.org
- Cued Speech Discovery
 - www.cuedspeech.com
 - 877-283-2030
- www.dailycues.com
 - Games, events, information, links
- Cueeverything.com

Dr. Edward C. Merrill Jr. , Ph.D.
President of Gallaudet, 1969-1983

"When I was senior administrator at Gallaudet, I took the broad mission of the institution seriously. The college was not only to provide the most meaningful college level instruction possible, but it was to identify and to solve problems influencing the lives of deaf people: educational, communication, social, occupational, economic and even psychological problems. For this reason, I supported the Cued Speech project. Each year it persisted. Each year new positive data were produced.

Twenty years later, Cued Speech has substantial data showing that it enables deaf children to attain competency in English at the level of hearing students grade by grade. I know of no other system that enables this to happen-not oral, not combined, not ASL (although the argument here will be that it has not been tried consistently).

I am aware that some deaf people, including a few deaf leaders, ridicule Cued Speech. This is probably because Cued Speech is heavily oral as it is a means of communication in English, even though the user is free to use ASL or combined systems with other deaf persons. I do not predict often, but in this case I predict that the success of this system will present a "moment of truth" for the deaf community. As more and more young deaf people achieve academically because of this system, deaf leaders will have to re-examine their options."

National Cued Speech Association



- www.cuedspeech.org
- info@cuedspeech.org
- 800-459-3529
- Free first-year membership to parents
- Packets of information sent to parents upon request
- Newsletter, *On Cue*
- Network of parent/professional support