

Deaf Children's Comprehension of Direct and Interpreted Education



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Deaf Studies Laboratory

R·I·T

NATIONAL TECHNICAL
INSTITUTE FOR THE DEAF

Presentation Overview

- My Story, Research Topics & Interpreted Education Today
- **Study 1:** Controlled Comparison of Interpreted Education and Direct Communication
- **Study 2:** Interviews of Students' Perception of Interpreted Education
- Implications & Conclusion
- Questions & Answers

MY STORY



COMMUNICATION AND EDUCATION



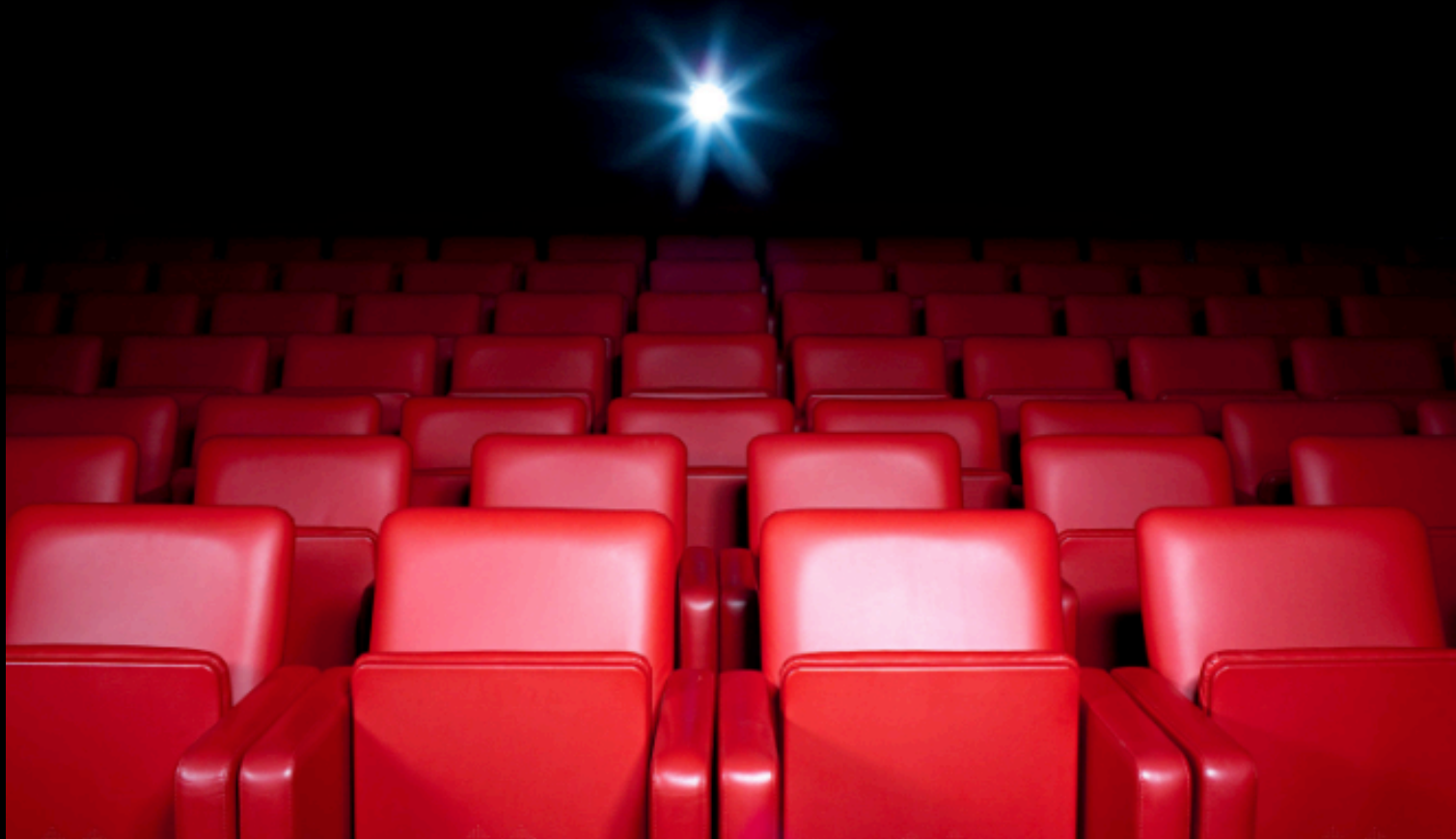
FAMILY



FAMILY



MOVIES



STAR
WARS

CLOSED CAPTION DEVICE



MAINSTREAM



MAINSTREAM



MAINSTREAM

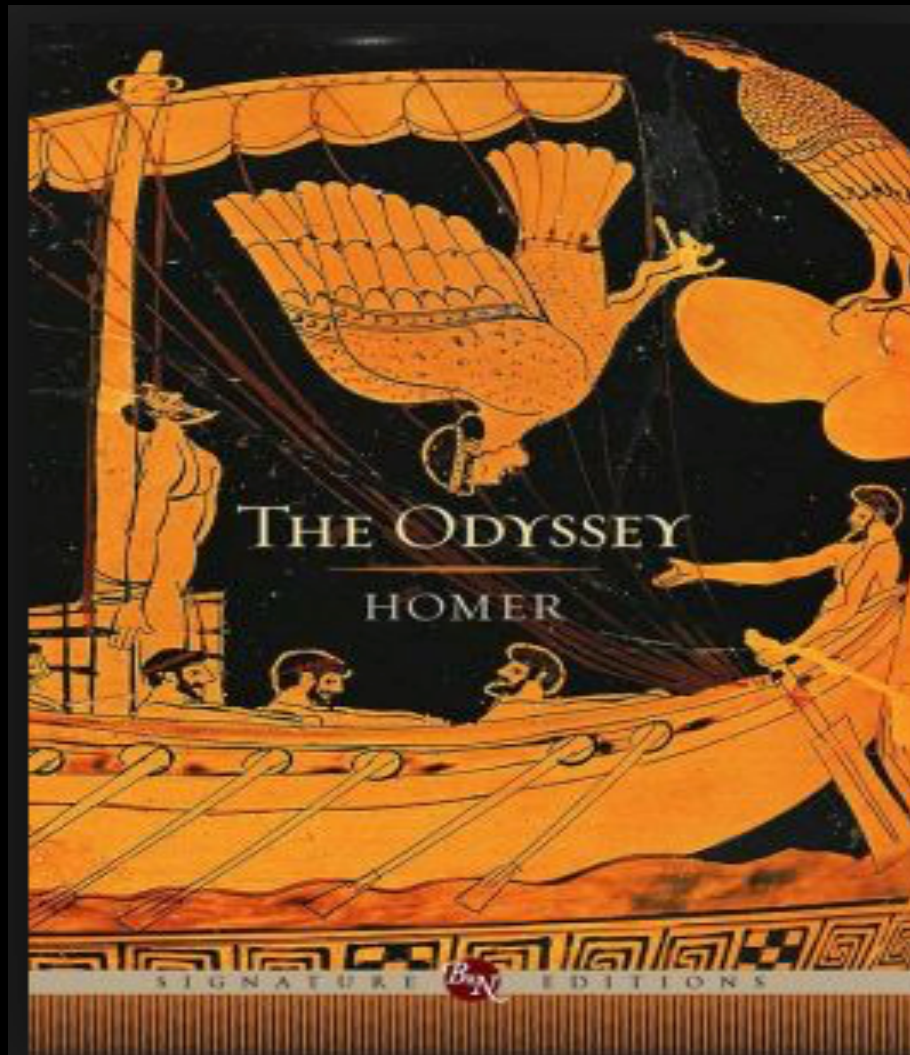


MAINSTREAM



GREG PROPP





High School Years



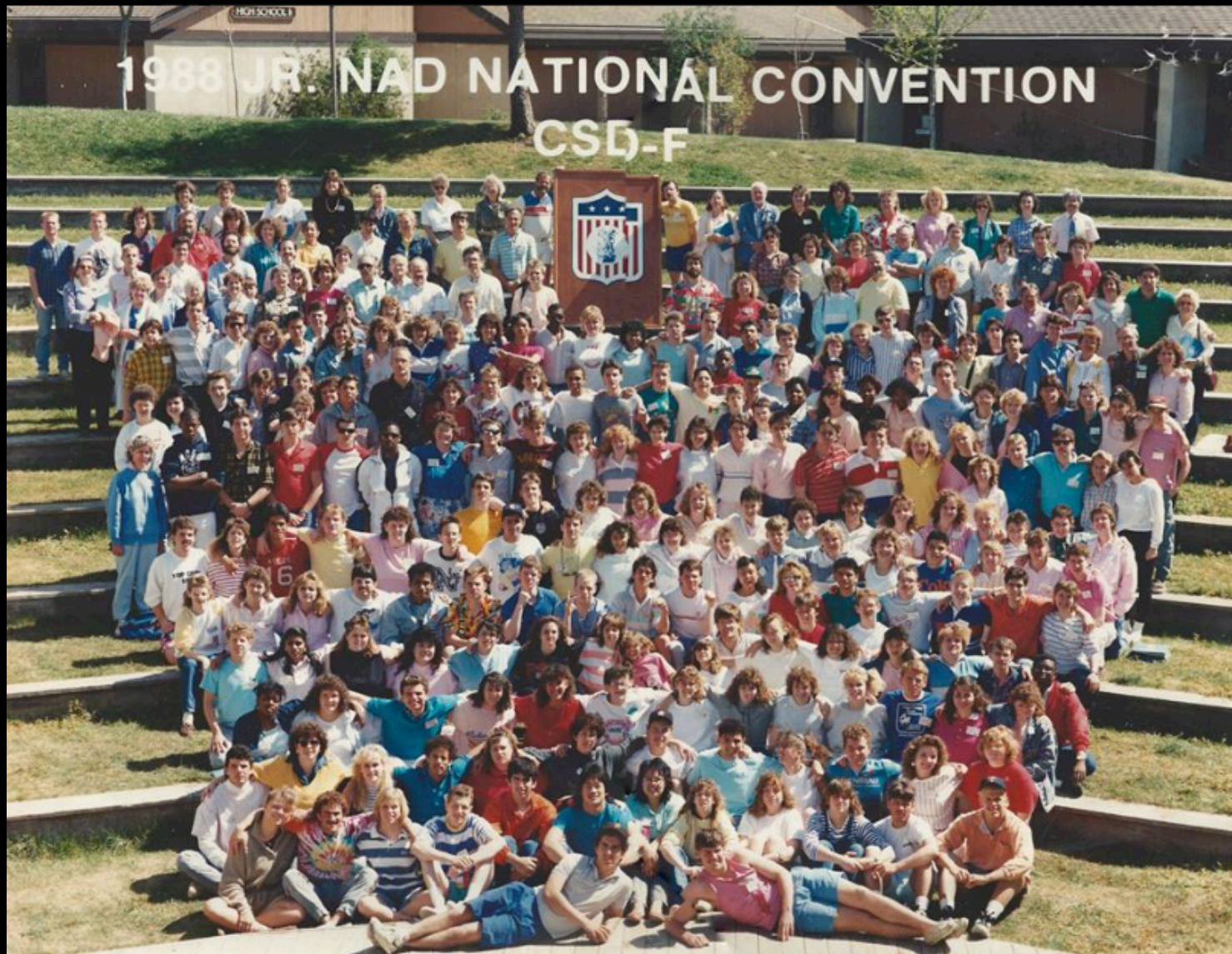
SPECIAL EDUCATION BUS



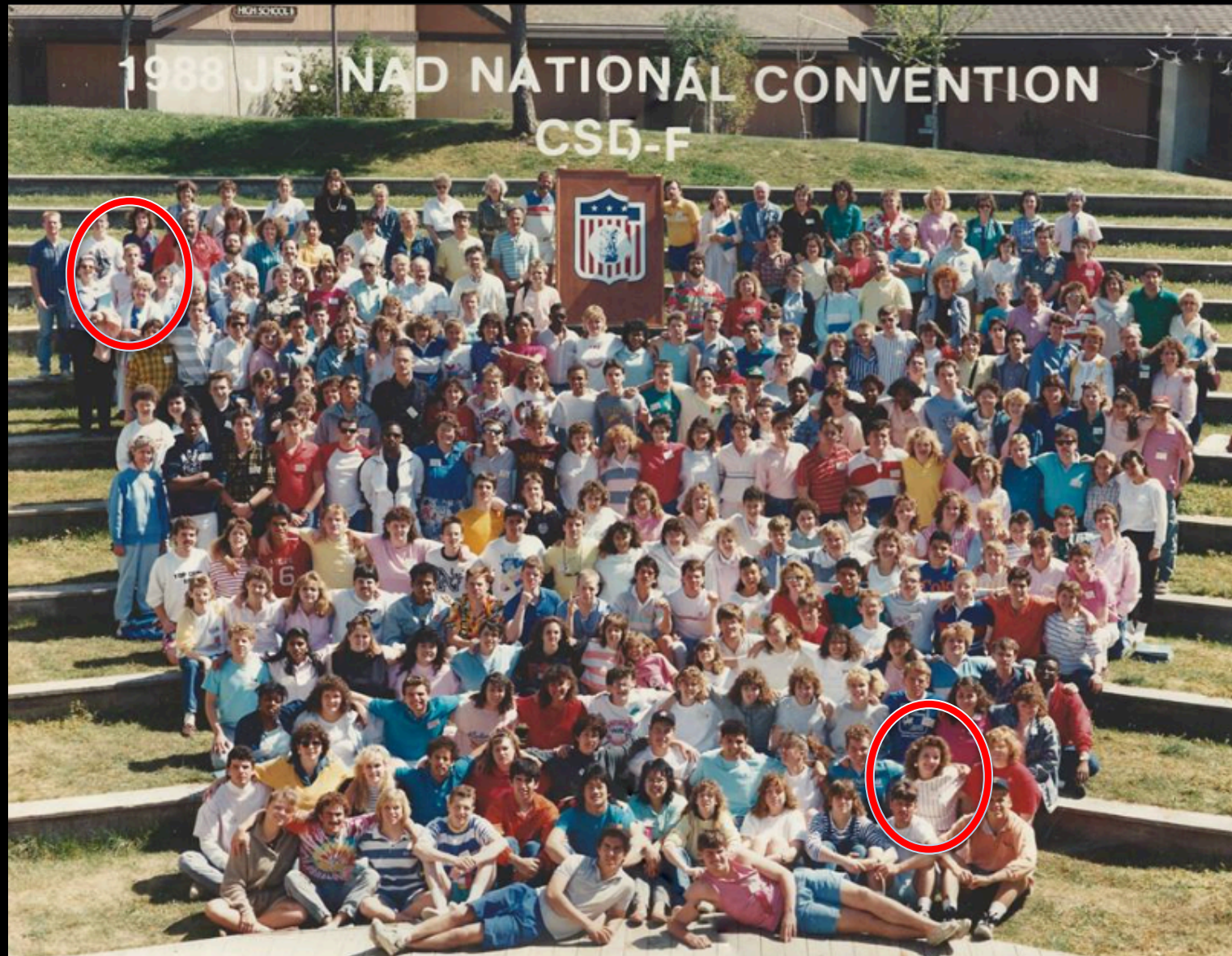
DEAF PRESIDENT NOW



TURNING POINT



TURNING POINT





MY FAMILY



WHY DO WE NEED STORIES?

Why are Qualitative Research
Needed?

“Researchers who have traditionally avoided qualitative inquiry are beginning to ask qualitative questions.”

(Mayan, 2009, p. 9)

Example

Pediatric organ transplantation situation



Researchers who do the interviews
with subjects with similar background
and language are really the best
researchers.

(Mertens, 2015)

RESILENCY IN EDUCATION



DINNER TABLE SYNDROME



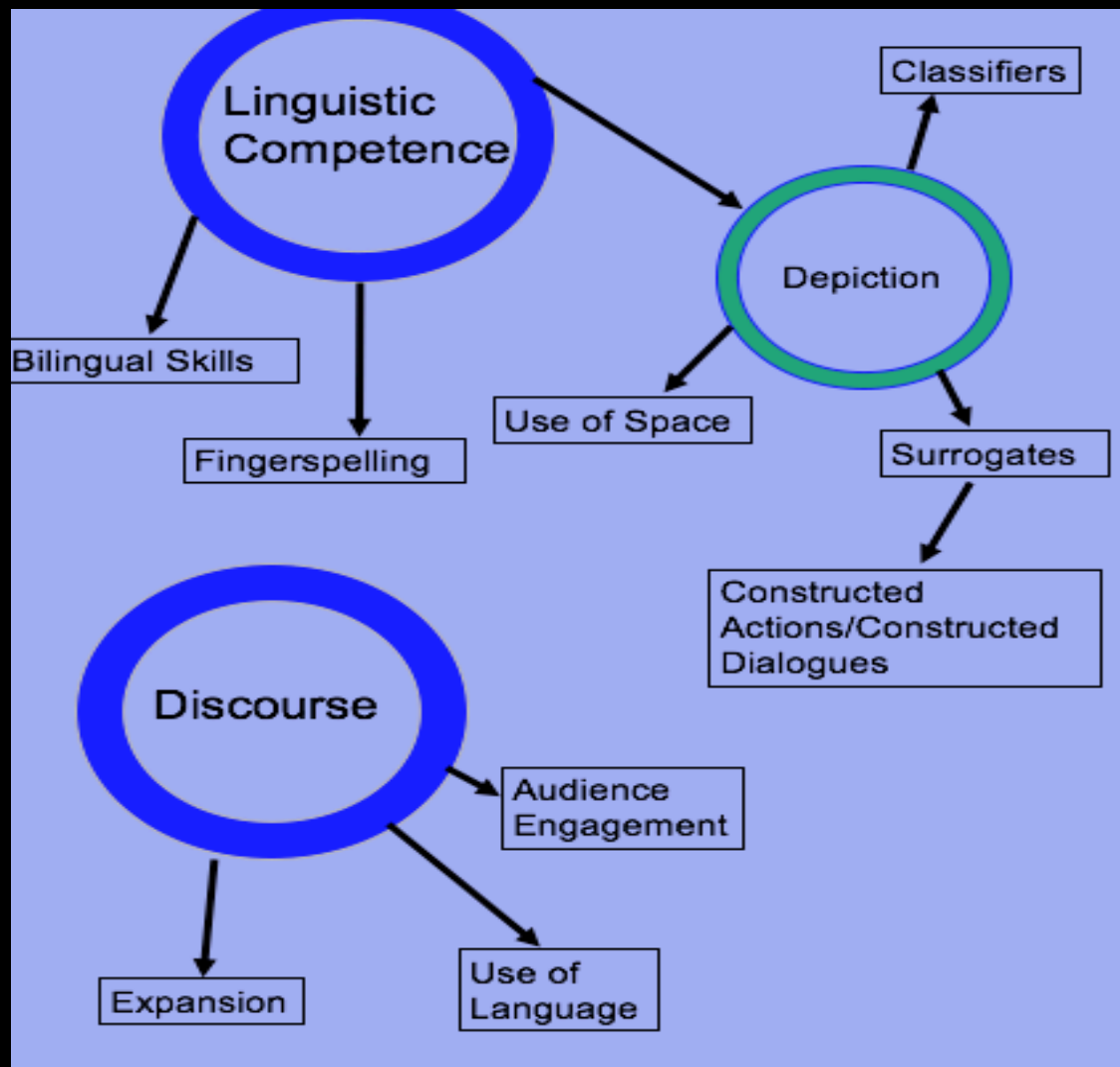
Sign Language Curriculum in Interpreter Preparation Programs



SOCIAL ASL VS. ACADEMIC ASL



LANGUAGE IDEOLOGY

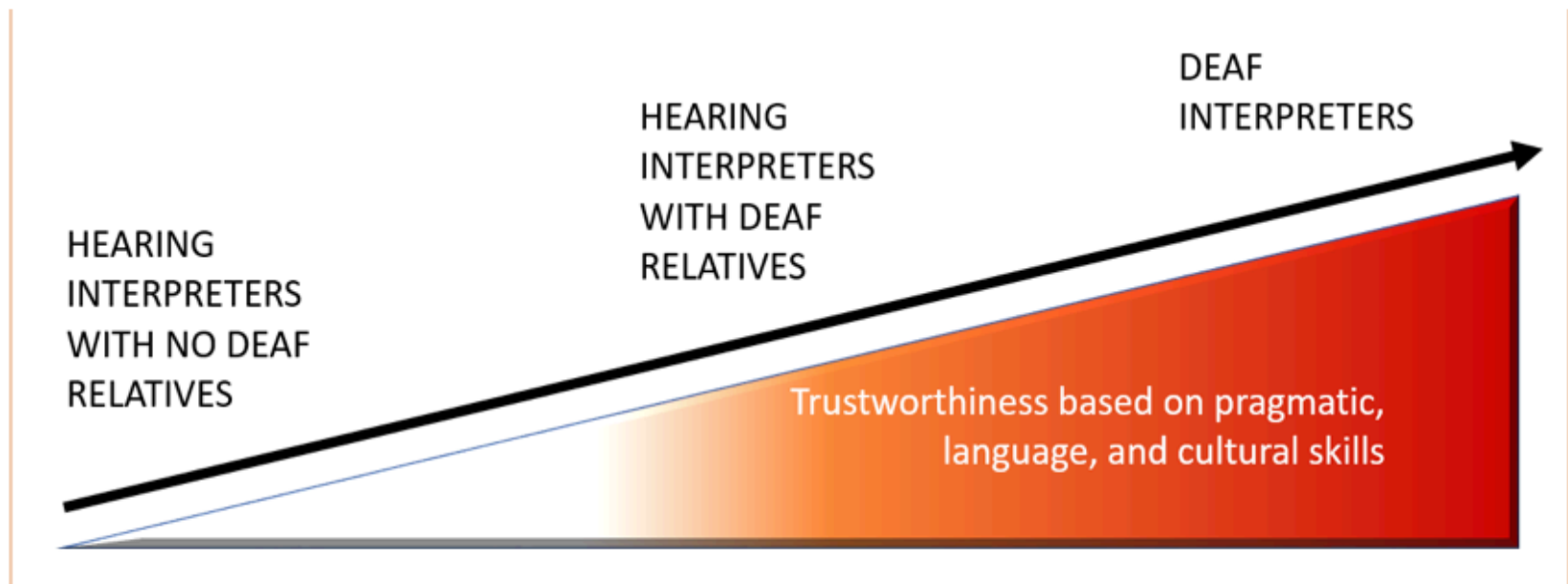


Interpreting Paradigm Shifts

- Helper model -> Bilingual-Bicultural model
 - Baker-Shenk 1991; Wilcox and Shaffer 2005
- Professionalization of interpreting services
 - Cokely 2005
- Reduced linguistic and cultural exposure as an unintended consequence
 - Witter-Merithew and Johnson 2005; McDermid 2009
- Less likely to be natural bilinguals
 - Zannirato 2008

Interpreting Paradigm Shifts

Figure 1: Language Ownership





Brenda Schick, Ph.D.
Professor
University of
Colorado



Peter C. Hauser, Ph.D.
Professor
NTID@RIT



Sally Roberts, Ph.D.
Associate Dean
University of Kansas



Rutherford Turnbull, J.D.
Professor
University of Kansas

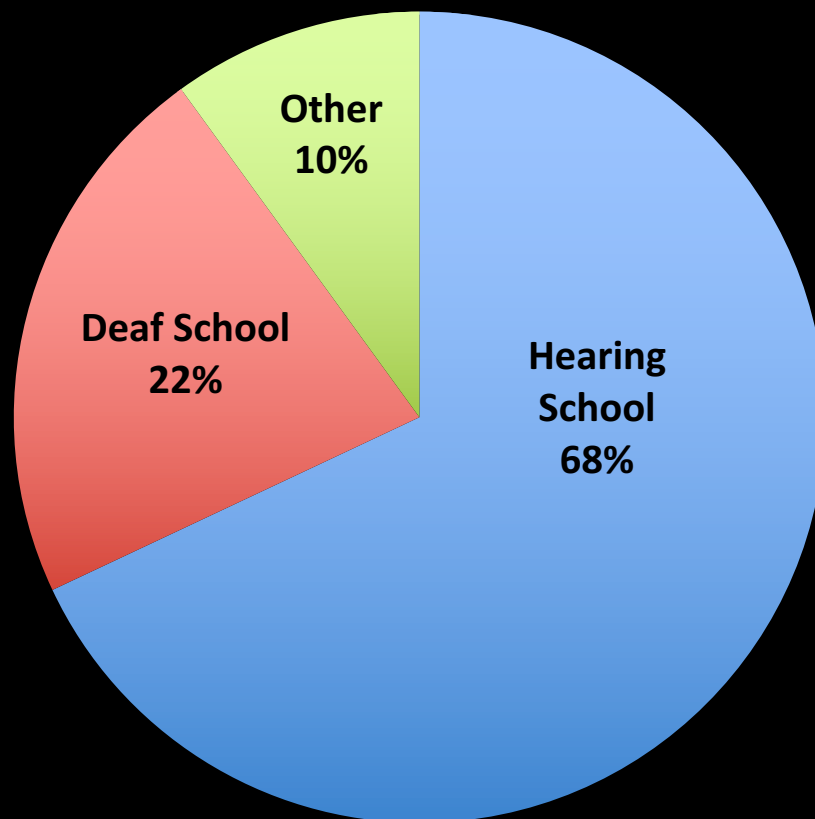


Ronald Kelly, Ph.D.
Professor
NTID@RIT

Brief History of Laws

- Section 504 of the Rehabilitation Act of 1972
- 1975 Passage of Public Law 94-142
- Education of all Handicapped Children Act
- 1990 Individuals with Disabilities Education Act

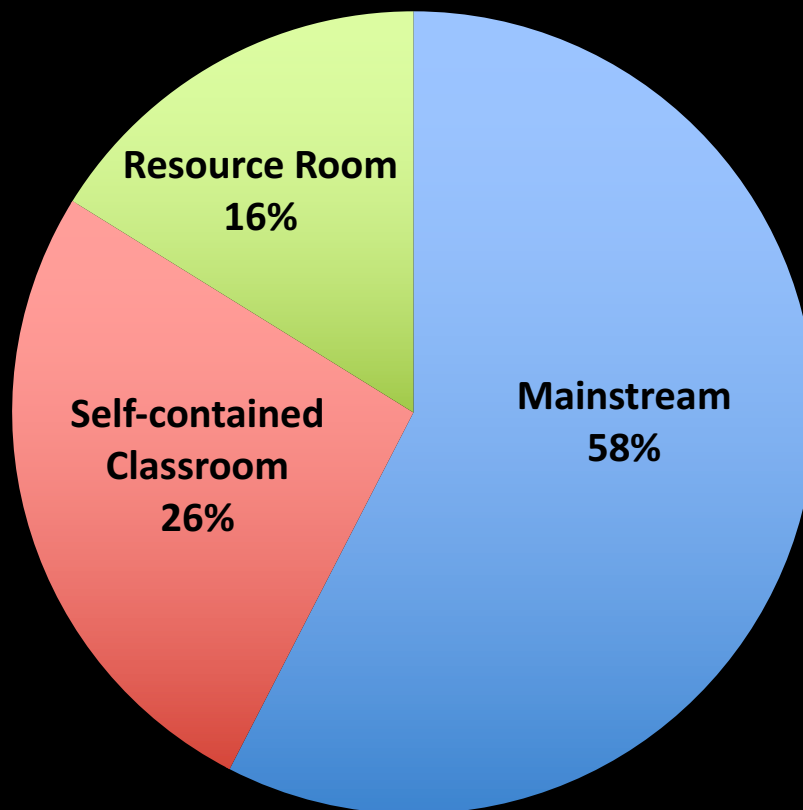
Today's Deaf Education



N = 23,731

Gallaudet Research Institute
2011-2012 National Data

Today's Deaf Education

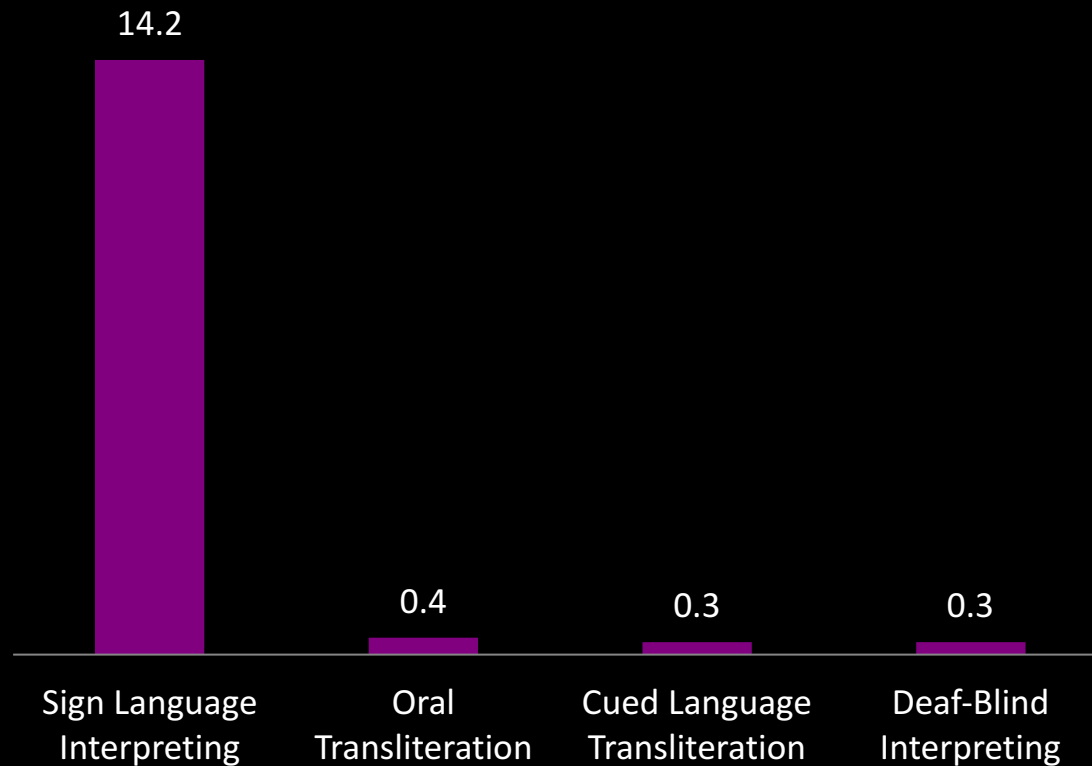


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Gallaudet Research Institute
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Types of Interpreting Services

Percentage of Services



Gallaudet Research Institute
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Mediated Educational Setting

A “mediated” educational setting refers to classrooms in which deaf signing children communicate with a non-signing teacher, via a third party like an interpreter-- in contrast to direct communication in ASL between a signing teacher and deaf signing student.

Past Interpreted Education Research

Comprehension related to Interpreting & Transliteration

- Deaf students comprehended more of a lecture through interpreting compared to transliteration (Fleischer, 1977; Livingston, Singer, & Abramson, 1994).
- Another study found no differences between interpreting & transliterating (Marschark, Sapere, Convertino, & Seewagen, 2004).

Past Interpreted Education Research

Interpreters' Comprehension of Students' Signs

- Educational interpreters understood students' English signing better than ASL and those with more post-training experience had better voicing skills (Hurwitz, 1986).

Past Interpreted Education Research

Hearing & Deaf Students' Comprehension

- Deaf students understood only 59% of the information compared to hearing students who understood 87% of the information (Marschark, Sapere, Convertino, Seewagen & Maltzen, 2004).

Past Interpreted Education Research

Study of what is actually being interpreted

- In a case study, it was found that a highly qualified interpreter in a 3rd grade classroom interpreted what was said 33.2% of the time and added or dropped elements 66.8% of the time (Wolbers, Dimling, Lawson, & Golos, 2012).

Past Interpreted Education Research

Interactions between Deaf and Hearing Students

A study on Deaf children in the mainstream found that Deaf-hearing interactions are far more limited than interactions between the same hearing children and their peers, or between the same Deaf students and their Deaf peers. Differences were found in the frequency of occurrences as well as duration, organization, and nature of participant roles (Keating & Mirus, 2000).

Past Interpreted Education Research

Incidental Learning

- A study related to incidental learning known as informal educational surrounding and deaf students' perceptions (Hopper, 2011).

Educational Interpreter Performance Assessment (EIPA)

- EIPA is a The Educational Interpreter Performance Assessment (EIPA) is a tool designed to evaluate the voice-to-sign and sign-to-voice interpreting skills of interpreters who work in the elementary and secondary school classroom setting.
- EIPA was created by Dr. Brenda Schick and Kevin Williams.
- www.classroominterpreting.org

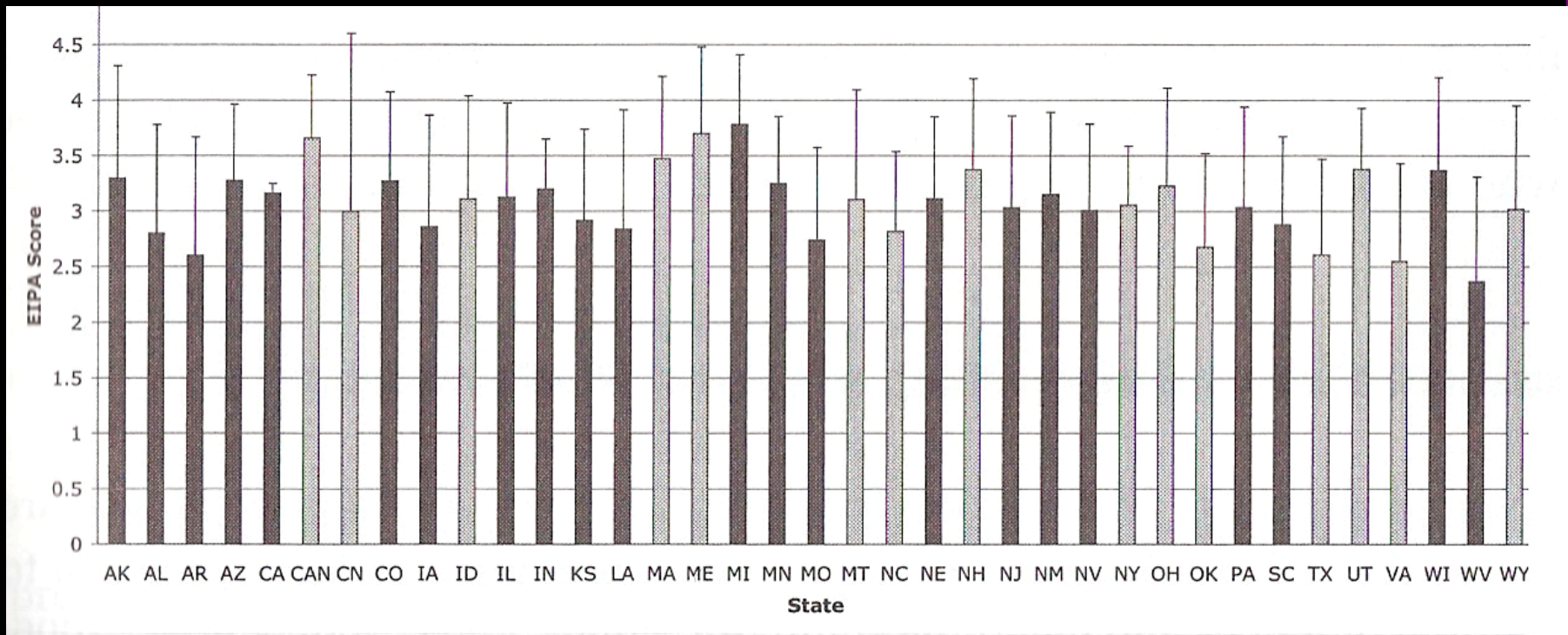
Educational Interpreter Performance Assessment (EIPA) Research

SKILL LEVEL	OVERALL COMPREHENSION
■ > 4.5	85-90%
■ 4.0 - 4.5	80%
■ 3.5 - 4.0	70%
■ 3.0 - 3.5	60%
■ 2.5 - 2.9	50%
■ < 2.5	Not in classroom

(Schick & Williams, 1999)

Educational Interpreter Performance Assessment (EIPA) Research

EIPA scores by state, with black bars representing some type of standard ($n = 4939$)



Educational Interpreter Performance Assessment (EIPA) Research

Average EIPA score (0-5 scale) for individuals who have attended an interpreter training program versus those who have not, and those with and without a bachelor degree ($n = 1505$)

	ITP (<i>SD</i>)	No ITP (<i>SD</i>)
BA Degree	3.57 (.65)	3.19 (.80)
No BA	3.38 (.71)	2.89 (.88)

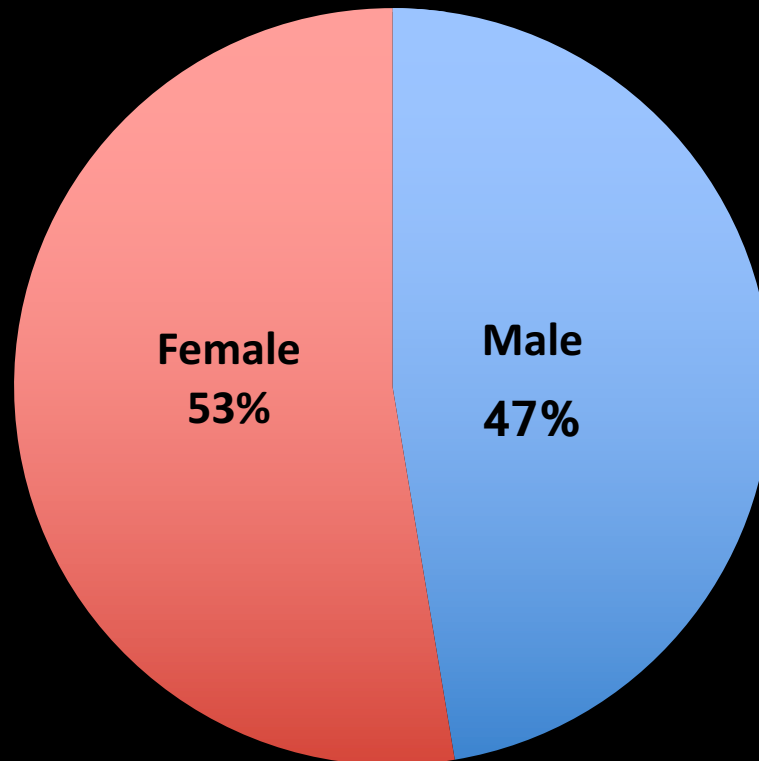
Study 1

Controlled Comparison of Interpreted Education and Direct Communication



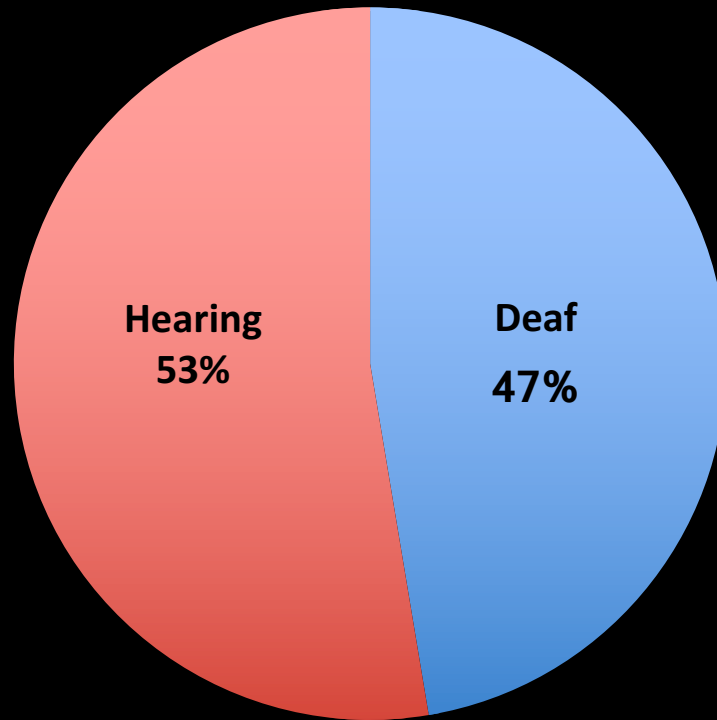
Participants ($N = 19$)

Gender



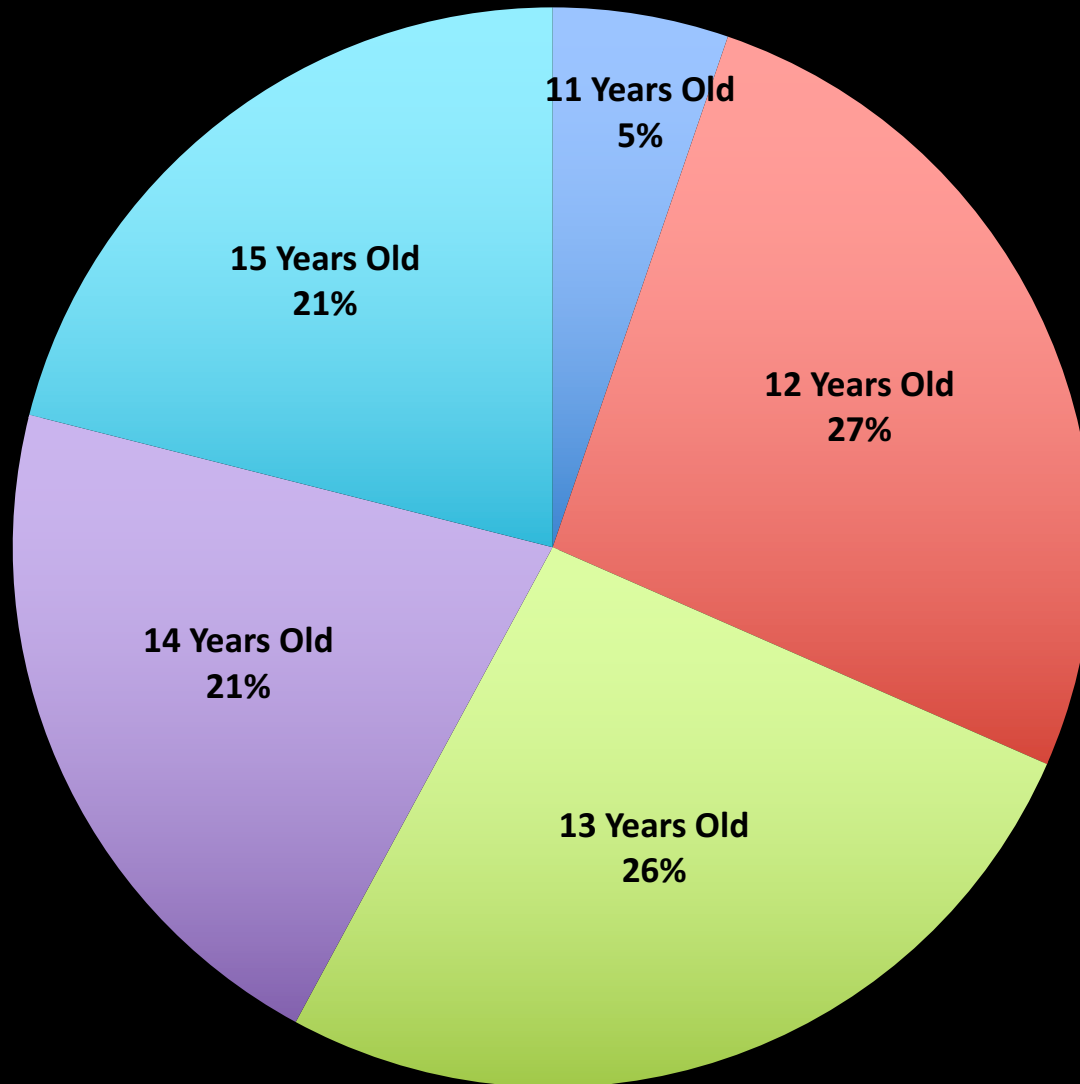
Participants ($N = 19$)

Parents' Hearing Status



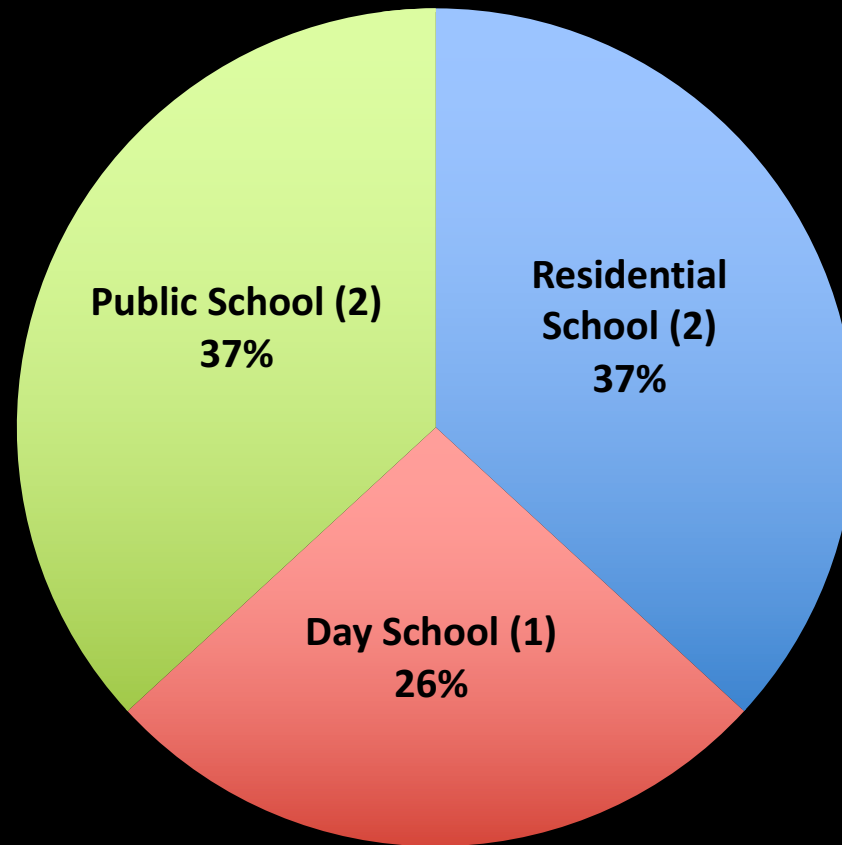
Participants ($N = 19$)

Age



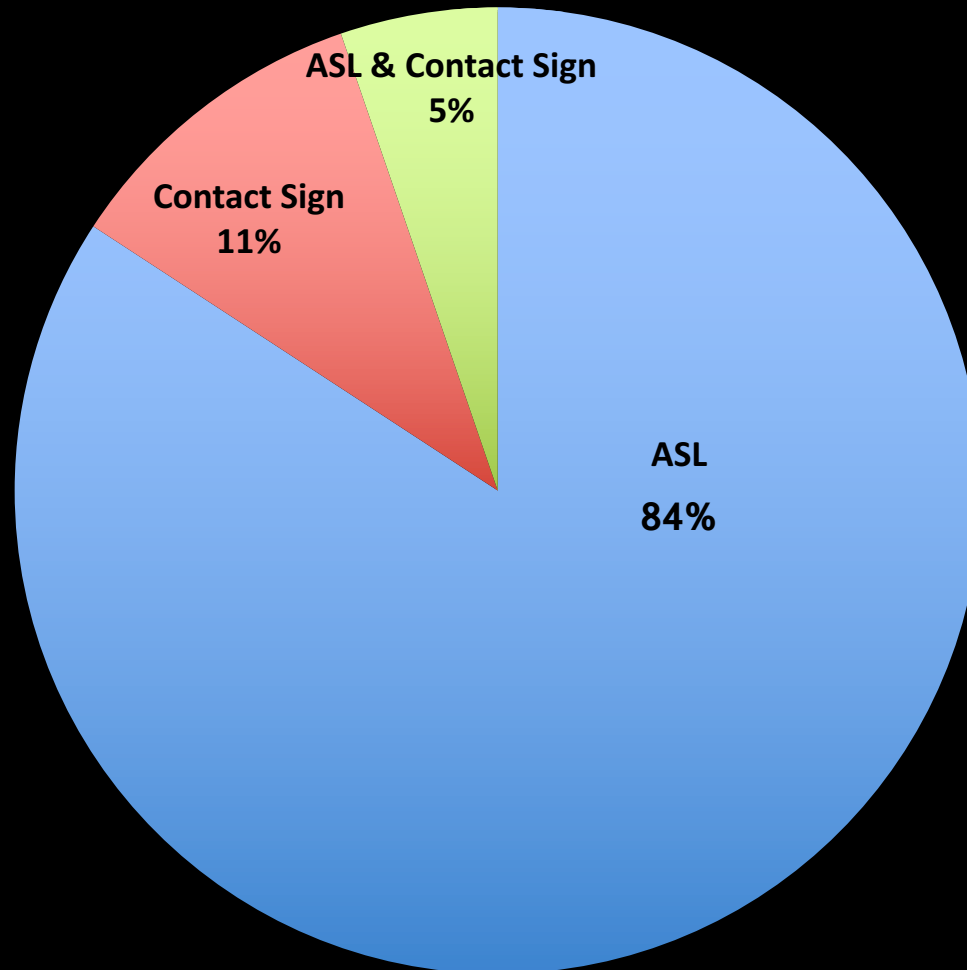
Participants ($N = 19$)

Type of School



Participants ($N = 19$)

Type of Communication



METHODS: Six Science Lessons on Video



METHODS: Six Science Lessons on Video



1. Conservation Tillage
2. The Importance of Trees in the Rural Area: Living Snow fence
3. Reef-building Corals
4. How Islands Form
5. Forensic Archaeology
6. Radioactive Dating

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METHODS: Six Science Lessons on Video

- **Teacher of Deaf**

- Deaf
- Native signer
- Certified in Teaching



- **Hearing Teacher**

- Degree in Science Education

- **Interpreter**

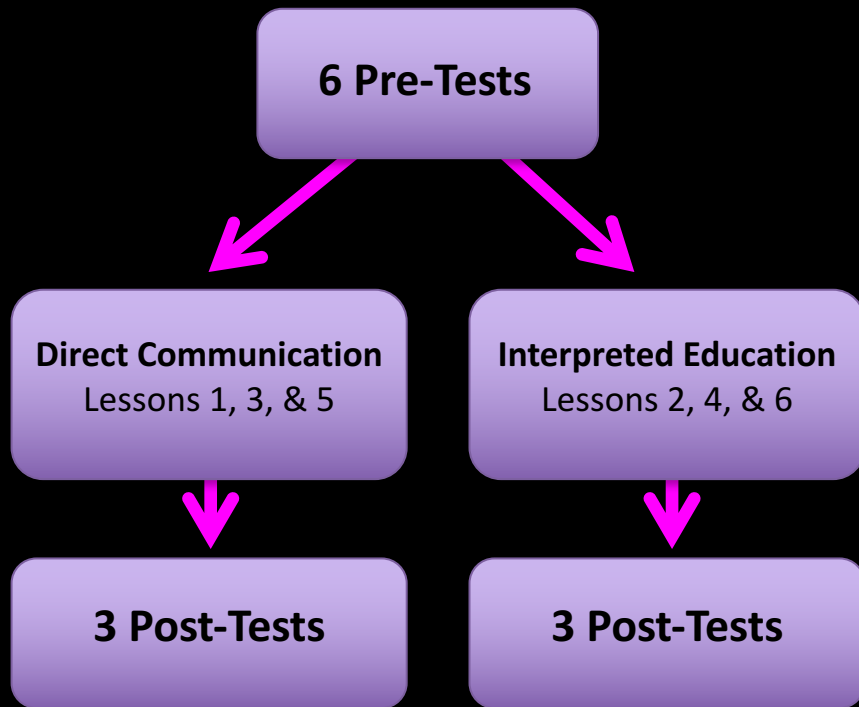
- CODA
- EIPA = 5.0
- RID: CI/CT



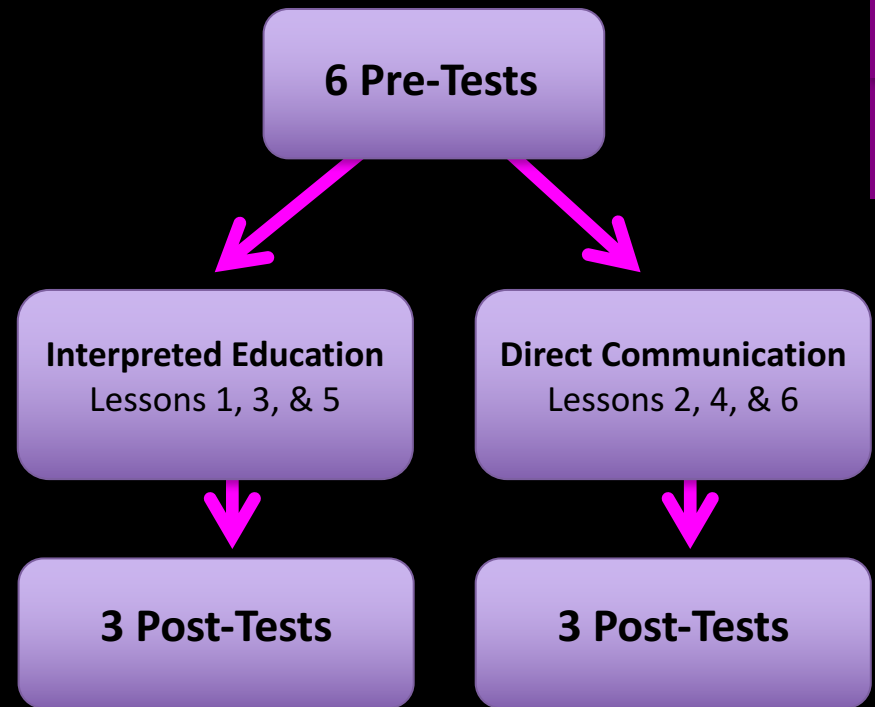
Both teachers followed the same scripts.

Within-Subject Design: Counterbalanced

PATTERN 1



PATTERN 2

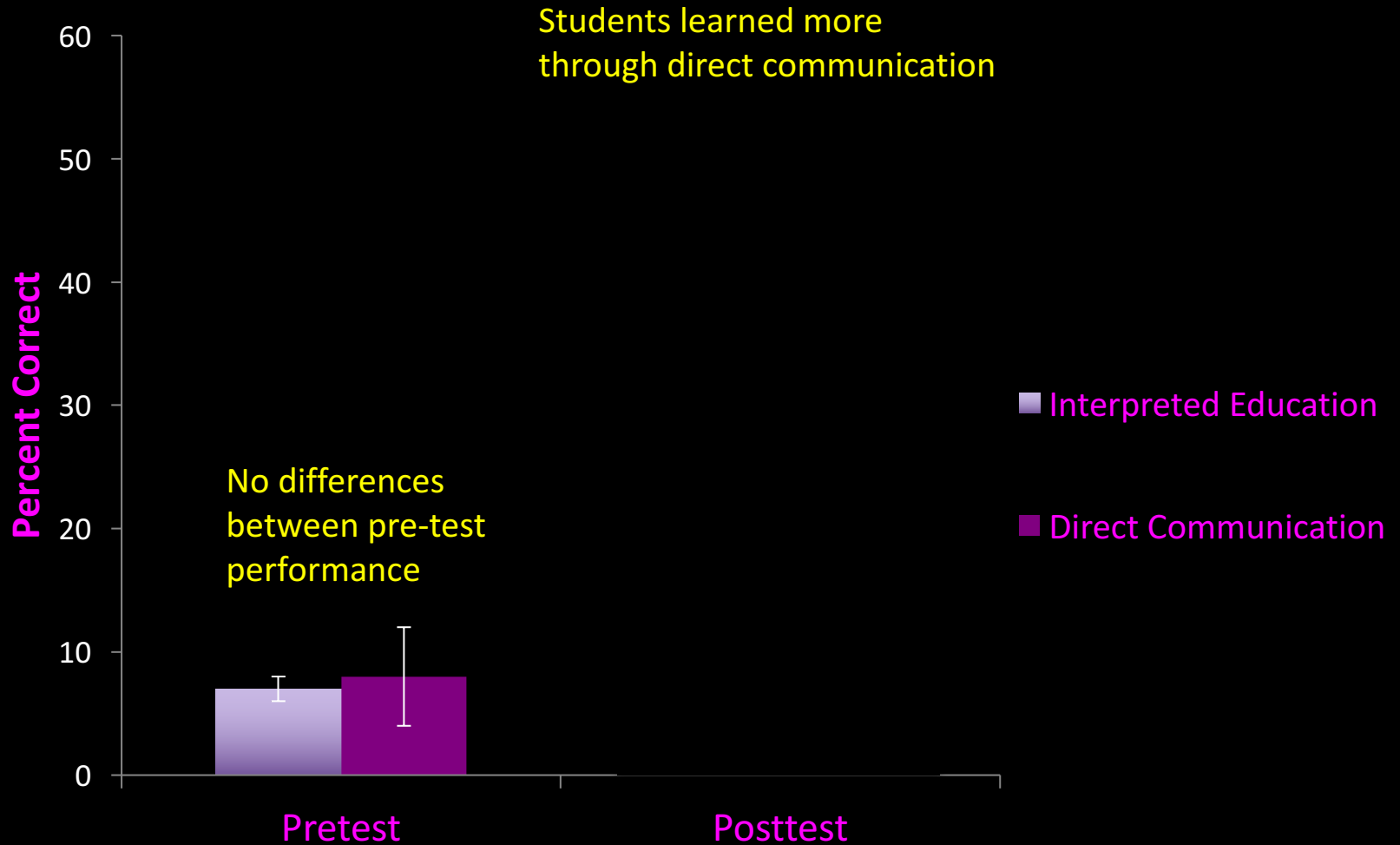


Each student took 3 Direct Communication lessons and 3 Interpreted Education Lessons

Research Question #1

Do deaf students learn differently in direct communication and interpreted environments?

Results



Significant main effect for **Test**: $F(1,18) = 120.551, p < .001, \text{Partial Eta Square} = .870$

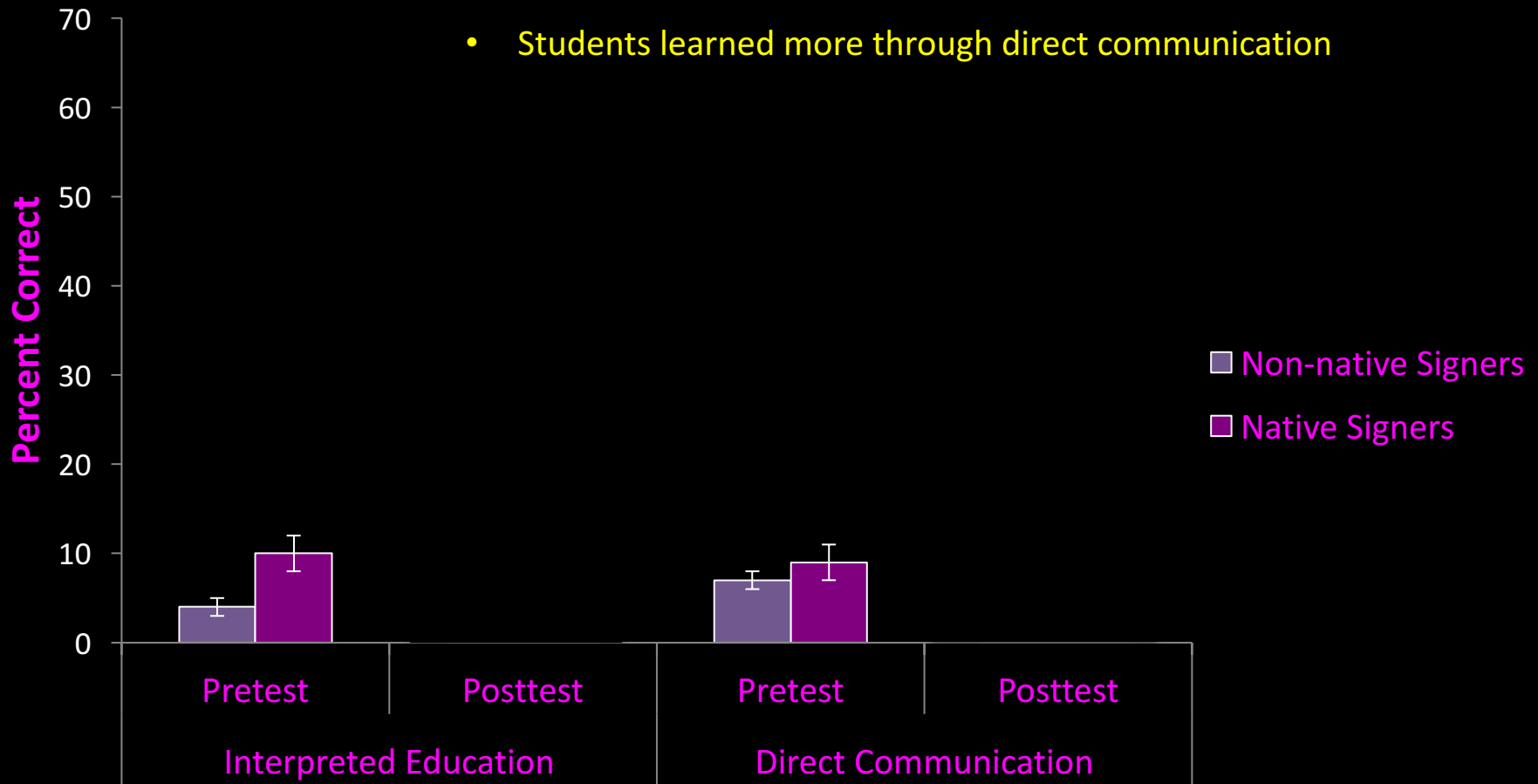
Significant main effect for **Communication**: $F(1,18) = 21.166, p < .001, \text{Partial Eta Square} = .543$

Research Question #2

Do native signers (Deaf of Deaf/DOD) and non-native signers (Deaf of Hearing/DOH) learn differently in direct communication and interpreted education?

Results

- DOD learn more than DOH in both conditions
- Students learned more through direct communication



Significant main effect for **Test**: $F(1, 17) = 144.016, p < .001, \text{Partial Eta Square} = .894$

Significant main effect for **Communication**: $F(1, 17) = 20.494, p < .001, \text{Partial Eta Square} = .547$

Significant main effect for **Group**: $F(1, 17) = 8.205, p < .05, \text{Partial Eta Square} = .326$

Experience with Interpreters

This study found that students who had more experience using interpreters did not have better learning outcomes than students with less experience.

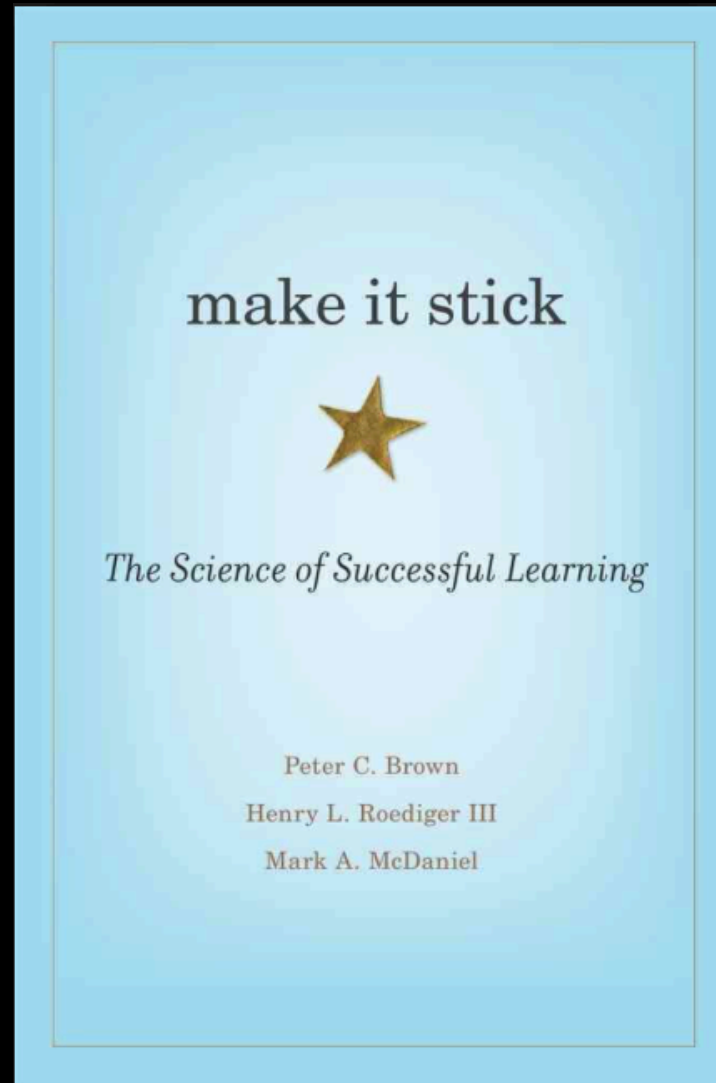
STUDY 1 Summary

- All students learn from both Interpreted Education and Direct Communication
- Deaf students learn more in Direct Communication classrooms
- Native signers learn more in both type of educational settings

STUDY 1 Theories

- DODs have the advantage of earlier language acquisition in their signing home environment, which supports their cognitive development.
- DODs have the advantage of earlier access to “real world” knowledge from direct conversations in their signing home environment, which provides more context for later learning.
- DODs have greater access to incidental learning (“overhearing” others’ conversations) in their signing home environment, which provides more context for later learning.

Cognitive Science Evidence-Based Studies related to Successful Learning



“The Power of Yet” by Carol Dweck

Growth Mindset Video

Group Discussion

How can educational interpreters help promote the mindset growth in deaf and hard of hearing students?

Study 2

Interviews of Students' Perception of Interpreted Education



The book cover features a dark teal background. On the left side, there is a vertical pink rectangle. On the right side, there is a light blue semi-circle. In the bottom left corner, there is a light blue semi-circle. In the bottom right corner, there is a light green rectangle. The title 'EDUCATIONAL Interpreting' is centered in the upper half, and the subtitle 'How It Can Succeed' is centered below it. The editor's name 'ELIZABETH A. WINSTON, EDITOR' is centered in the lower half.

EDUCATIONAL Interpreting

How It Can
Succeed

ELIZABETH A. WINSTON,
EDITOR

Participants ($N = 20$)

	<i>n</i>	%
Gender		
Male	7	35%
Female	13	65%
Parent(s)' Hearing Status		
Deaf	7	35%
Hearing	12	60%
Both Deaf & Hearing	1	5%
Schools		
Elementary School	2	10%
Middle School	5	25%
High School	6	30%
College	2	10%
Graduate School	5	25%

Common Themes Among Deaf Students who used Educational Interpreters

- Students' View of Interpreters' Roles and Responsibilities at School
- Comprehension of Interpreter
- Simplification or Alteration of Signs for Educational Interpreters
- Wish List for Interpreters
- Wish List for Mainstream Teachers
- Wish List for Hearing Peers
- Wish List for Interpreter Coordinators
- Advice to Students Learning to Use an Interpreter
- Advice to Parents of Deaf Children

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- Wish List for Interpreter Coordinators
- Advice to students learning to use an interpreter
- Advice to Parents of Deaf and HH Children

Students' Views of the Roles & Responsibilities of Interpreters

- Tutors
- Notetakers
- Teaching assistants
- Members of a support team
- Communication facilitators
- Friends – “I would have conversations and fun with them when the class was boring.”

Students' Views of the Roles & Responsibilities of Interpreters

“In elementary school [interpreters] are tutors and help you a lot. In middle school they are more [like] interpreters and help you only a little. In high school they only help you if you really need it. I am now working on asking my teachers more than my interpreters if I have questions. I need to learn to rely on the teachers more in college, so this is good practice for that.”

- High School student

Comprehension of Interpreters

Older students reported that they understood interpreters less well or less often than did younger students.

Elementary School – students often don't have the self-advocacy or language skills needed to use an interpreter effectively without training.

- Older students – interpreters often do not have the background knowledge needed for conceptually accurate interpretations.

Comprehension of Interpreters

Educational Level	<i>n</i>	Mean	Range
Middle School	4	94.5%	90-98%
High School	5	80.5%	50-97.5%
College and beyond	6	72.9%	50-90%

Comprehension of Interpreters

Cognitive Load

- Learning through an interpreter means split attention and increased cognitive load.
- Students need to internally check and re-interpret what interpreters sign.

Simplification or Alteration of Signs for Educational Interpreters

“Many times, I have to repeat what I am trying to say. Sometimes, the interpreter tries to guess what I am saying. I know this when the teacher’s comment is irrelevant or doesn’t make sense based on my comment.”

- High School Student

Students' Wish List for Interpreters

- Interpret Everything
- Don't let your personal style interfere with my education
- Let me make my own decision
- Prepare for class
- Do not rely on us for sign instruction
- Match your voicing to my style
- Match your signing to the teacher's style
- Know your limit and be open to my suggestions
- Set some boundaries
- Prepare for class
- Ask me to repeat if I am not clear
- Advocate for me when I can not advocate for myself
- Give me eye contact
- Don't become lax with your fingerspelling
- Make use of facial expression

Students' Wish List for Interpreters

Interpret everything said from the moment they walk in the classroom door instead of waiting for formal class to begin to interpret whenever the teacher begins to talk.

“I wish the interpreter would always interpret side conversations instead of me asking her to interpret them for me. I want to know what the hearing students are saying. Sometimes the interpreters interpret MY side conversations, and I don't like it. But I guess that is fair.”

- High School student

Students' Wish List for Interpreters

Let me make my own decisions – don't make choices for me, coddle, or discipline me.

"I don't like it when the interpreters tap on my desk and tell me to pay attention to them. I feel like that is my choice, not the interpreter's. I don't like it when they tell me what to do."

- Middle School Student

Students' Wish List for Interpreters

Please do not rely on us for information, sign instruction, reassurance, or fun.

“Sometimes the interpreters seem to be under a lot of stress. They will ask again and again if they are clear and I will reinforce them, letting them know they are doing fine. I’ll say, ‘If you aren’t clear, I’ll let you know and ask you for clarification.’ It has to do with self-confidence in their skills.”

- High School student

Students' Wish List for Interpreters

Please match your voicing to my style

“For example, when she signs, ‘assimilate’, the interpreter voices, ‘come together,’ making her sound less articulate.”

- College student

Students' Wish List for Interpreters

Match your signing to the teacher's style.

“Many times I can hear the teacher's voices and sometimes the interpreters' styles don't match the teacher's tone.”

- Hard of Hearing student

Students' Wish List for Interpreters

Know your limits, admit to your mistakes, and be open to my suggestions.

“When the interpreter says ‘Interpreter error’, I am relieved.”

“Luckily, that interpreter said she had to step out of that role and that was good because she knew her limits.”



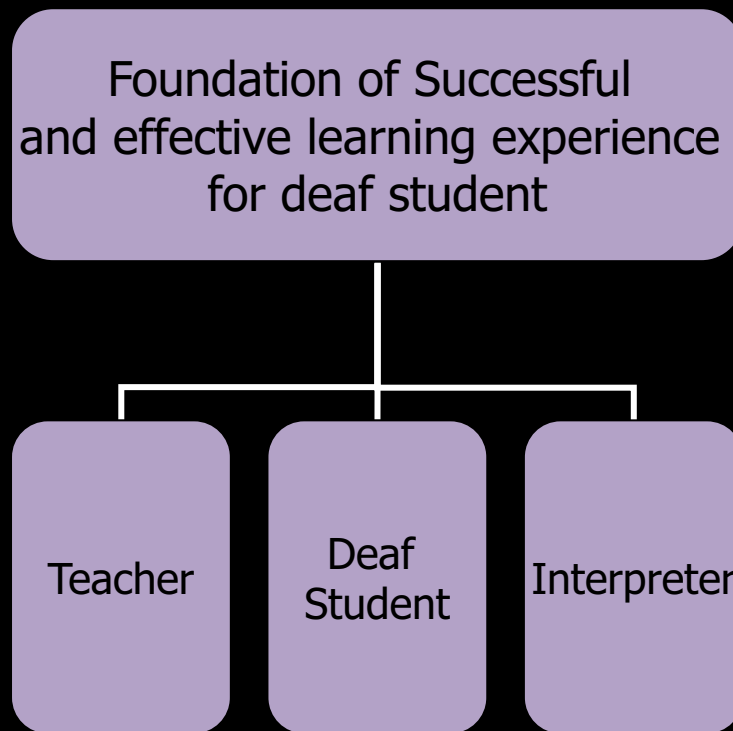
Implications & Conclusion

Implications

- Mainstreamed programs are still an experiment. We still do not have enough information about the best practices of educational interpreting yet. No standardized assessment yet.
- From Study 1, even with the best interpreter (EIPA score of 5.0, RIT certified and a CODA), we know that deaf children are still missing some information compared to the direct communication setting.
- Professionals disagree about the strict boundaries of the interpreters' roles.
- It is a challenge for interpreted education to be as effective as direct instruction. Innovative approaches might be needed to make this possible.

Tripod Model for successful partnerships in the classroom

*Kids do not fail;
Educational systems do.*



Model of factors that likely affect a student's learning in an interpreted education (Schick, 2008)



Future Studies

- Replicate Study 1 with other topics: History, math etc.
- Replicate this study, but use additional age groups of deaf children.
- Replicate this study, but use Certified Deaf Interpreters to work with the non-signing teachers.
- Replicate this study, but add supplemental materials for students, to complement the interpretation (e.g., teacher's notes, PowerPoint, etc.).

Future Studies

- State Department of Education and School Administrators Perspectives
- Cognitive Science – what do we know about Deaf student's language acquisition through sign language interpreters? Their language and cognitive development?

If you do not succeed, you
should...

If you do not succeed, you
should...

GIVE UP



Questions and Answers

Thank You!

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