Development of Explicit Versus Implicit Phonetic Training for Adult-learners of ASL

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fast  like-handshapes  sequential  highly coarticulated
Background

• Older work on Deaf adults’ fingerspelling comprehension
  • Hanson (1981)
  • Schwarz (2000)
Background

• More recent studies of student fingerspelling comprehension

• Geer & Keane (2014)

• Keane & Geer (2016)
This project

• Fingerspelling is a hard skill.

• Students and skilled signers seem to have different approaches (conscious or not) for reading fingerspelling.

• Can students be trained to read fingerspelling differently (i.e., more like skilled signers)?
Fingerspelling Musical Chairs
<table>
<thead>
<tr>
<th>Finding / Observation</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled signers see finger spelled words as wholes</td>
<td>Teach students to read fingerspelling more like</td>
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<tr>
<td>Students rely heavily on hold portions (even more than contextual cues)</td>
<td>skilled signers</td>
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<td>Students improved fingerspelling comprehension after not-highly scientific musical</td>
<td>Design an actually scientific training</td>
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<tr>
<td>chairs re-cap training</td>
<td></td>
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Synthesizing

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Precedent for cue-re-weighting in L2 teaching and explicit versus implicit training
Explicit vs Implicit Instruction

**Implicit training**: modeling this type of fingerspelling

**Explicit training**: explaining why the same letter is produced two different ways in the same word
Explicit training

• Teaches students about

1. The structure of fingerspelling: **hold** versus **transition** segments
Explicit training

• Teaches students about

1. The structure of fingerspelling: **hold** versus **transition** segments

2. Frequently found phonetic variation

- **Y** -
- **E** -
- **U-R**
- **G-H-T**
Implicit training

• Teaches students about

• Prescriptively correct manual letter formation
Implicit training
Implicit training

• Teaches students about

  • Prescriptively correct manual letter formation

  • Prescriptively correct production of double letters
Implicit training

• Teaches students about
  • Prescriptively correct manual letter formation
  • Prescriptively correct production of double letters

In short, re-teaches fingerspelling how students learned it the first time following the curriculum they use (Smith et al, 2008).
Trainings compared: -UR-

**Implicit training**: “Here are some fingerspelled words.”
Trainings compared: -UR-

**Explicit training**: Explain how these letters combine
Trainings compared: -Y-

**Implicit training**: “Here are some fingerspelled words.”
Trainings compared: -Y-

**Explicit training**: Explain the distribution of the two forms of -Y-

Word-initial -Y-                      Word-medial & word-final -Y-
Trainings compared: -E-

**Implicit training**: “Here are some fingerspelled words.”
Trainings compared: -E-

**Explicit training**: Explain the distribution of the various forms of -E- and what factors may predict that form.
Trainings compared: -GHT-

**Implicit training**: “Here are some fingerspelled words.”
Trainings compared: -GHT-

**Explicit training**: Explain how these letters combine
### Trainings compared

<table>
<thead>
<tr>
<th></th>
<th>Explicit</th>
<th>Implicit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39 total slides</td>
<td>39 total slides</td>
</tr>
<tr>
<td></td>
<td>(including some of the exact same slides)</td>
<td></td>
</tr>
<tr>
<td>Videos and still images</td>
<td>Videos and still images with text explanation of different linguistic</td>
<td>(the same) Videos and still images</td>
</tr>
<tr>
<td></td>
<td>features</td>
<td></td>
</tr>
<tr>
<td>Opportunities to check</td>
<td>Opportunities to check</td>
<td>Opportunities to check</td>
</tr>
<tr>
<td>comprehension skills</td>
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</tbody>
</table>
The pilot study

<table>
<thead>
<tr>
<th>18 ASL 3 students in summer school</th>
</tr>
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<tr>
<td>pre-test, training, post-test</td>
</tr>
<tr>
<td>time separating events: 1 week</td>
</tr>
<tr>
<td>Assignment in explicit or implicit training group: Balanced for using ASL 2 grade</td>
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</tbody>
</table>
Pilot
Pilot: Unanswered/raised questions

1. Why don’t students improve more on the transitions-only condition?

2. How long do the effects of the training last?

3. Does palm orientation impact performance?
### Full study

<table>
<thead>
<tr>
<th>80 ASL 3 students in fall semester</th>
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</thead>
<tbody>
<tr>
<td>pre-test, training, post-test 1, post-test 2</td>
</tr>
<tr>
<td>time separating events: 3 week</td>
</tr>
<tr>
<td>Assignment in explicit or implicit training group: Balanced for using ASL 2 grade</td>
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</table>
Default Orientation

The graph shows the probability of correct response across different conditions and blocks. Each condition is represented by a different shade of gray, with 'allClearA', 'holdsOnly', 'transitionsOnly', and 'allClearB'. The x-axis represents the block (pretest, posttestA, posttestB, pretest, posttestA, posttestB, pretest, posttestA, posttestB), and the y-axis represents the probability of correct response.
Non-default orientation
Unofficial debrief

Implicit training
“provided a comprehensive review of fingerspelling production”

Explicit training
“helped me to understand fingerspelling as cursive”

This Way or This Uway?
Unofficial debrief

**Implicit training**
Students shocked they didn’t improve; they felt more confident about post-test

**Explicit training**
More confident about the post-test, not surprised they’d improved
Three approaches

<table>
<thead>
<tr>
<th></th>
<th>Good modeling</th>
<th>Additional description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓</td>
<td>Prescriptively based. Might conflict with what is modeled.</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>Ø</td>
</tr>
<tr>
<td>3</td>
<td>✓</td>
<td>Descriptively based. Reflects linguistic analysis. Consistent with modeling.</td>
</tr>
</tbody>
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Thank you!

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