Investigating sign language variation through intelligibility testing: The recorded text test retelling method

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Introduction to Study

The Recorded Text Test (RTT) is a method of language variety intelligibility testing that was developed to investigate levels of comprehension between a language variety and its standard. There are two primary ways that this test has been used in spoken languages. Grimmer (1995) methodically develops a list of specific questions about the test to be answered by the participant (RTT-Q), and Kluge’s (2006) approach which asks participants to retell a text with scoring based on the inclusion of particular content points (RTT-R). Although the use of RTTs for exploring variation has not been widely used with sign languages, we propose that with careful attention to deaf cultural factors, this methodology could be successfully adapted and applied to provide valuable insights into sign language variation among diverse deaf communities.

Because of the widespread influence of American Sign Language (ASL) throughout various regions of the world, we investigated ASL intelligibility in a few countries that have a historical connection with the United States. During our initial research, we focused on three countries in Latin America and the Caribbean where deaf schools or religious missions have been started by organizations from the United States. In Peru, the Republic of the Dominican Republic, and Jamaica.

This study demonstrates that the RTT intelligibility testing used in spoken languages can be successfully adapted to be used in deaf cultural contexts with visual-gestural languages, providing a quantitative means for studying sign language variation and use. The results of this type of research can provide significant clues in evaluating the accessibility of sign language content in deaf communities, especially in conjunction with other research methods such as worldlist comparisons and sociolinguistic questionnaires.

Methodology of the RTT-R Intelligibility Test

ASL Text Construction:
- Film native ASL signer in Tucson, Arizona telling personal narrative approximately three minutes long
- Splice narrative into 16 sections, each 10-21 seconds long
- Identify content points of ASL narrative retold by native Tucson ASL users: 65 target content points identified from four tests in Tucson

Construct practice test:
- Film native signer in target testing location telling personal narrative 35-45 seconds long
- Splice practice test narrative into five to seven sections, each five to nine seconds long

Administer practice test:
- Gather participant consent and metadata from participants that will take test in pairs (one as a reteller, one as a learner)
- Show practice test in its entirety once
- Test administrator demonstrates retelling first section of practice test with one participant repeating each section
- Participates each practice retelling sections of practice test to partner two to three times
- Participants decide which person will retell the ASL text and which will listen to the reteller

Administer ASL RTT-R:
- Reteller watches ASL text in its entirety once; learner is not allowed to see it
- Reteller repeats each section to the learner; learner repeats each section back to reteller; reteller is allowed as many times as desired to ensure the learner understands the story and may watch a section a second time if needed

Scoring the ASL test:
- Video recorded test response is imported into ELAN and original sections are marked
- Each section is analyzed to identify how many of the 65 target content points (up to six points in a section) are retold to the learner (using binary scoring system)
- The sum of the retold target content points are divided by the total number of target content points to give the intelligibility percentage

Conclusion

The RTT-R method appears to have decreased the effect that a participant’s educational level had on the successful completion of the intelligibility test and made the explanation of the test results much more simple.

Using the retelling method greatly increased the speed of test creation as compared to the development and successful interpretation of selected questions in the question and answer method.

Working in pairs appeared to decrease test anxiety, increase the enjoyment for participants, and fit better with the community-focused nature of the deaf communities.

Approaching the test as an opportunity to teach a deaf story from another location gave the text-taker an opportunity to give back to their community through storytelling, a value in both Jamaica and the Dominican Republic.

Application of RTT-R: ASL Testing

We tested ASL materials in three locations: Dominican Republic (2008), Jamaica (2009), and Los Angeles, USA (2010). The following charts give results from each of those tests in five cities in the Republic of the Dominican Republic, 9 tests in 5 cities in Jamaica, and 6 tests in Los Angeles, USA.

Summary of RTT-R Results

It appears that the Jamaican deaf community has higher intelligibility of ASL than the Dominican deaf community, although neither scores as well as native ASL users from the United States. Higher standard deviations in the Dominican Republic and Jamaica appear to reflect the presence of bilingualism in both deaf communities, with some participants having more contact with ASL than others. Those do not seem to be any specific participant trait, such as amount of education, affecting test scores. This is an important finding in both locations, contradicting other reports that most members of both communities understand and use ASL and questioning the successful use of ASL materials in either country.

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