Review on the state of the art on signed language testing technologies

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Overview

• Introduction
• Test examples using new technologies
• Results of an international survey
• Advantages and disadvantages of new technologies
• Examples of future scenarios
• Conclusion
Changes in testing

• Paper and pencil vs. computer-based
• Pre-recorded tasks in video format
• Life- vs. pre-recorded instructions
• Computer adaptive tests
• Use of test booklet (with photos) vs. interactive response mechanisms
• 1-2 testers vs. self-administered
Signed language assessment

• Shortage of signed language tests
• State of research of signed languages
• Tests for L1 and L2 learner
• Test formats (e.g., multiple-choice)
• Test delivery
  >> > New technologies
A look at existing computer- & web-based sign language tests
Computer Test of German Sign Language

(Mann, 2005)
Assessment of SL of the Netherlands

(Hermans et al., 2007)
BSL Nonsense Sign Repetition Test

(Mann et al., 2008)
ASL Phonological Awareness Test

(McQarrie et al., 2012)
BSL Vocabulary Test (BSL-VT)
Online Receptive Skills Tests

- Based on BSL Receptive Skills Test
- Adaptations into ASL, DGS, etc.
- Online for different SL versions of the RST

(Herman et al., 1999)
Online version of receptive skills test
Background questionnaire
Web-based Sign Language Test Portal

• Web-based SL portal to implement different kinds of SL tests
• Saving of resources
• International collaboration
• For practititoners and researchers
Use of ICT for sign language testing- results from a survey
Survey:
Sign Language Testing & Use of ICT

Sample:
• N = 19
• 10 different countries (Australia, Canada, Czech Republic, Ethiopia, France, Germany, Iceland, The Netherlands, UK, USA)
Web-based sign language testing

• Advantages
  – Accessibility
  – Interactiveness
  – Effectiveness in test administration, data storage & analysis, score reporting
  – User-friendly for target group (children)

• Disadvantages
  – Technical issues (e.g., server connectivity, support at test site, fire wall)
  – Ethical issues/data protection
Thinking out of the Box ("wish-list")

- Better technical infrastructures at test sites, e.g. schools
- Automatic recognition of signed answers (lexical level)
- Data base with data across sign languages > platform for research and discussion among researchers and teachers
- Touch-screen technology for comprehension test

(Haug, 2014)
A look into the future of sign language testing..
The future...?! 

- Automatic sign language recognition (e.g., via Kinect)
- Automatic sign language generation/synthesis (avatar)
- Adaptive sign language assessment

Example of Kinect for automatic SL recognition
From: Dicta-Sign, 3rd year public report, dictasign.eu
Avatar-animated sign language testing?

From project „Trainslate“, University of Zurich

English translation: Please spread yourselves over the entire platform and move towards the center of the wagon immediately after boarding.

http://www.cl.uzh.ch/research/maschinelleuebersetzung/signlang_en.html
https://www.uea.ac.uk/computing/people/profile/j-glauert
Conclusion on web-based signed language tests
For users....

- Easy access (self-administrable)
- More suitable for deaf test taker’s needs
- High familiarity among young participants with new media
- More engaging (younger test takers)
- Immediate results: score reporting
- Greater freedom (place of testing, access to test results, linked to own language leaning portfolio)
For sign language test developers...

- Greater freedom to manipulate characteristics/features of items and tasks
- Rapid item authoring
- Automated test assembly
- New item type interfaces
- Prompt distribution of score results
- Wider distribution of test materials
Limitations

- Internet security
- Lack of control
- Equality of access (geographical dispersion, age, educational background)
- Unsupervised modes of test administration (reliability/validity)
- Test Security (test itself, test taker’s identity, test results)
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Resources

- www.signlang-assessment.info/
- www.signlanguagetest.com
Thank for your attention
References


UK: The Forest Bookshop.

