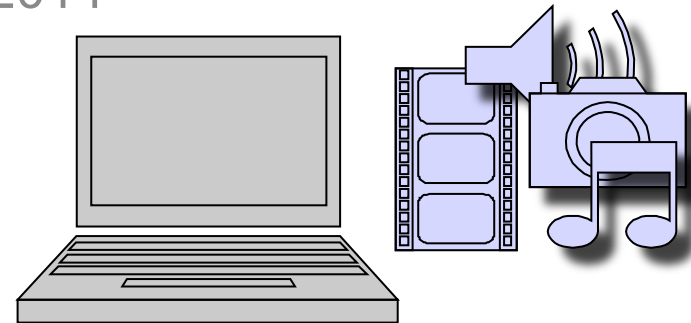


Review on the state of the art on signed language testing technologies

Tobias Haug & Wolfgang Mann

ALTE 2014 Paris

April 11th, 2014



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

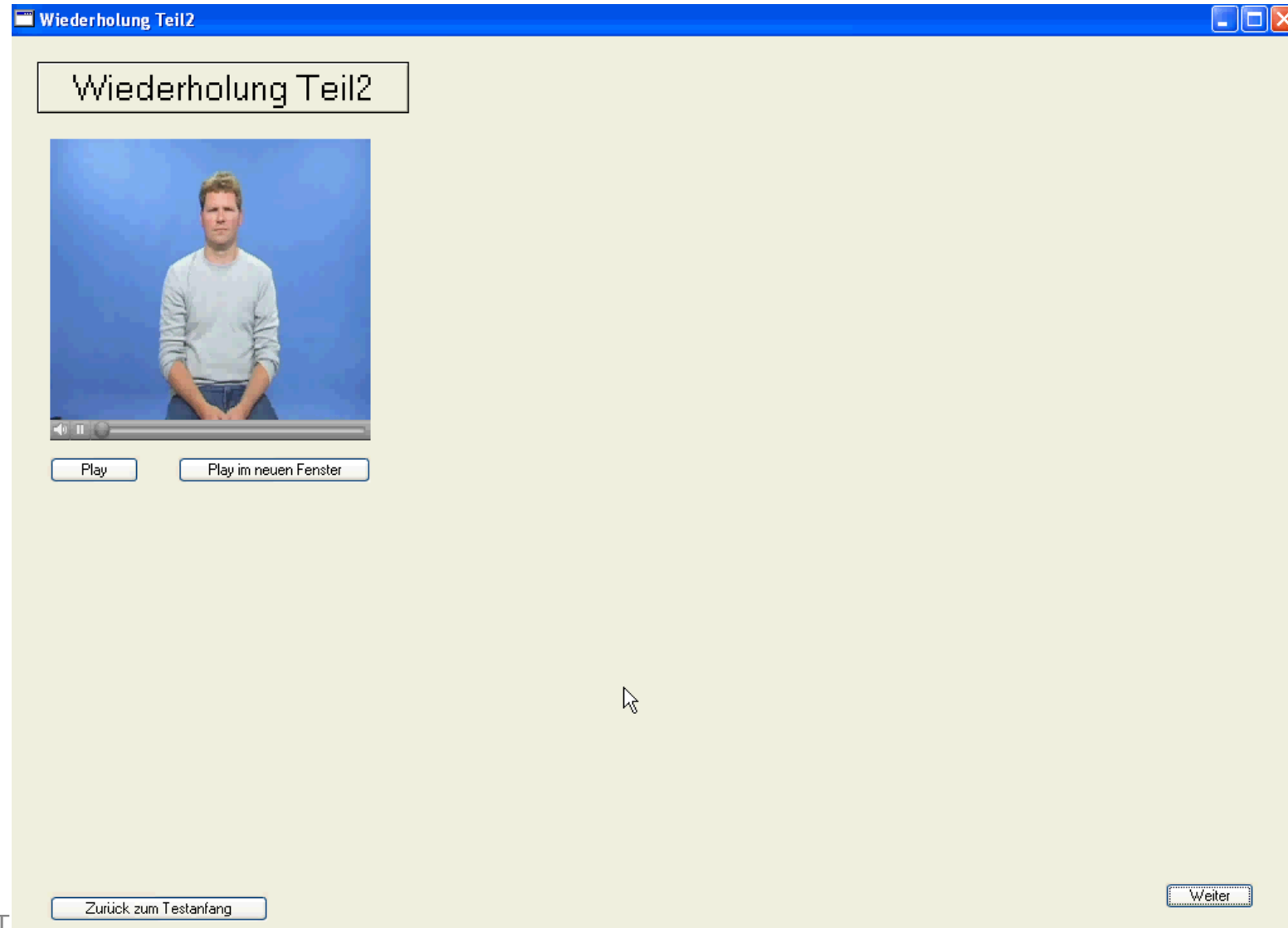


Signed language assessment

- 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

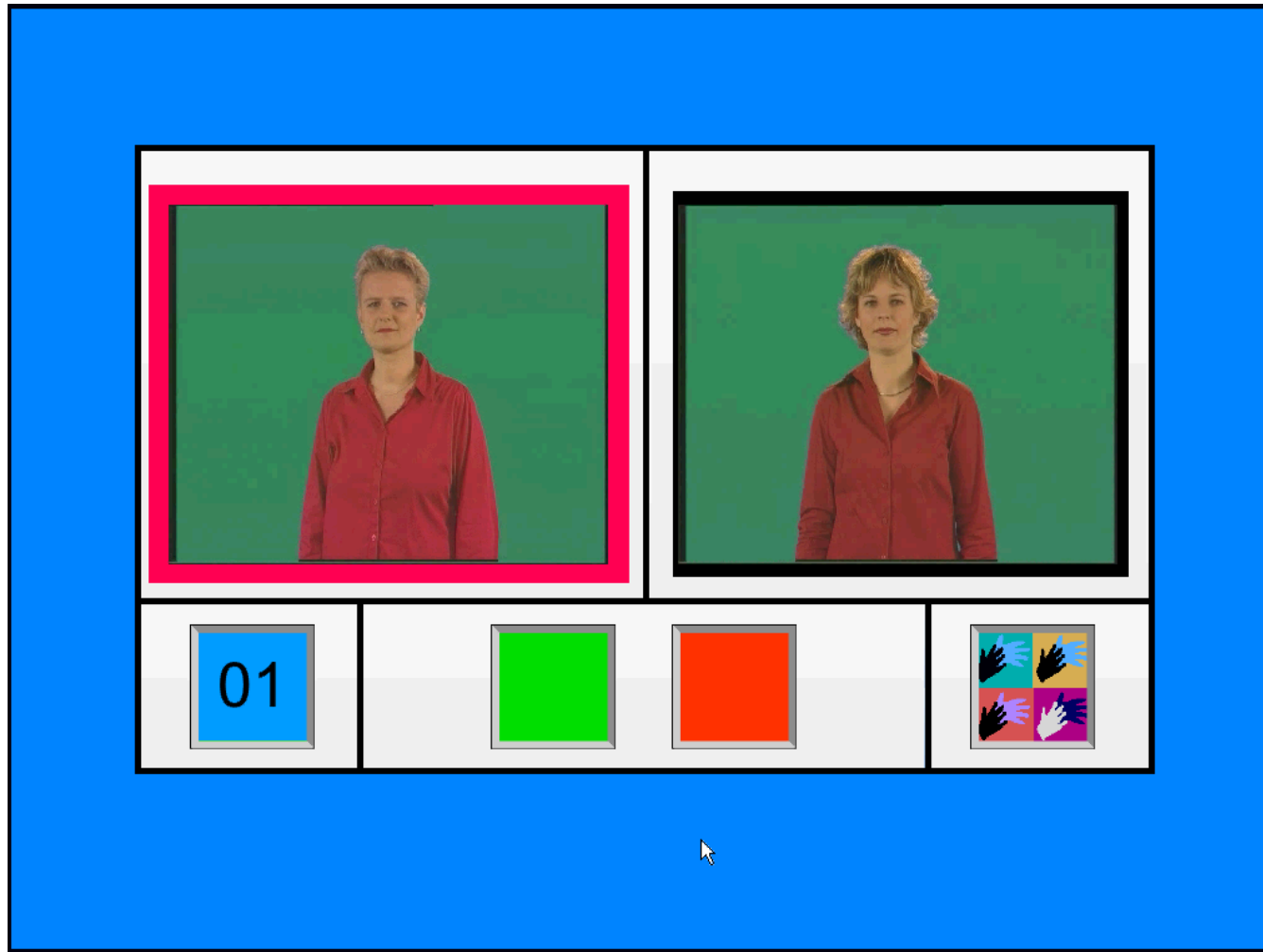
Computer Test of German Sign Language



ALT

(Mann, 2005)

Assessment of SL of the Netherlands



BSL Nonsense Sign Repetition Test



ASL Phonological Awareness Test

American Sign Language
Phonological Awareness Test
ASL-PAT
Research Administrator

My Account

Logout

School List

Student List

+

Marilyn

Student Info

Edit

Name:	Marilyn
Date of Birth:	November 30, 2007
Gender:	Female
Pure Tone Average:	96.000
Degree of Hearing Loss:	Profound
Age of Onset Hearing Loss:	0
Has Cochlear Implant:	False
Age of Implantation:	
First Language Learned:	
Age of ASL Aquisition:	0
ASL Proficiency:	Beginner
Communication Mode	ASL

Begin Test

Picture Dictionary

BSL Vocabulary Test (BSL-VT)

p1

1. Look at the picture. Do you know the BSL sign?




2. Select a score and enter the word for the BSL sign in the textbox

A ☐
B ☐
C ☐
D ☐

word signed:

P21

1. Look at the BSL sign in the video. Can you think of any other BSL sign which has a similar meaning?




2. Select a score and enter the word(s) for the BSL sign(s) in the textbox

A ☐
B ☐
C ☐
D ☐






word signed:

C2 - 1



1 2 3 4
☐ ☐ ☐ ☐

C1 - 1



1 2 3 4
☐ ☐ ☐ ☐

(Mann, 2009)

Online Receptive Skills Tests

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



Online version of receptive skills test

Sign Language Receptive Skills Test

Logout

Home > Languages

Actions

New Language

List Participants

New Participant

List Skillstests

New Skillstest

Languages

Id	Name	Description	Created	Status	Actions
2	DGS	Deutsche Gebärdensprache	2012-03-24	active	<div>View</div> <div>Edit</div> <div>Delete</div>
3	BSL	British Sign Language	2012-03-24	active	<div>View</div> <div>Edit</div> <div>Delete</div>
5	ASL	American Sign Language	2012-11-29	active	<div>View</div> <div>Edit</div> <div>Delete</div>
8	Auslan	Australian Sign Language	2013-01-15	active	<div>View</div> <div>Edit</div> <div>Delete</div>
9	DSGS	Deutschschweizer Gebärdensprache	2013-11-18	active	<div>View</div> <div>Edit</div> <div>Delete</div>

Page 1 of 1, showing 5 records out of 5 total, starting on record 1, ending on 5

<< previous | | next >>

CAKEPHP POWER

Background questionnaire

ALTE, April 10 & 11 2014

Sign Language Receptive Skills Test

Home > Participants > Add Participant

Actions

List Participants

List Schools

List Languages

Add Participant

1. Name of child

First name*

Last name*

2. School name:*

London Test School

3. Comments:

4. What type of school does this child attend? Please click.

- ☐ School for the deaf
☐ Unit for hearing-impaired
☐ Mainstream
☐ Primary
☐ Other > please specify:

5. What mode(s) of communication are used within the school? Please click any that apply.

- ☐ British/Irish Sign Language
☐ Cued Speech
☐ Oral
☐ Total Communication
☐ Sign Supported English
☐ Other (please specify):

6. Describe the child's exposure to sign language at school.

School uses sign language as means of instruction in class.

7. Communication support provided in the resource unit (if applicable)

communication support worker

8. Communication support provided in the mainstream (if applicable)

communication support worker

Other support (please specify):

9. Child's home post code

10. Child's date of birth: *

21 March 2014

www.slas.ch, 2014

Web-based Sign Language Test Portal

- Web-based SL portal to implement different kinds of SL tests
- Saving of resources
- International collaboration
- For practicioners 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”)

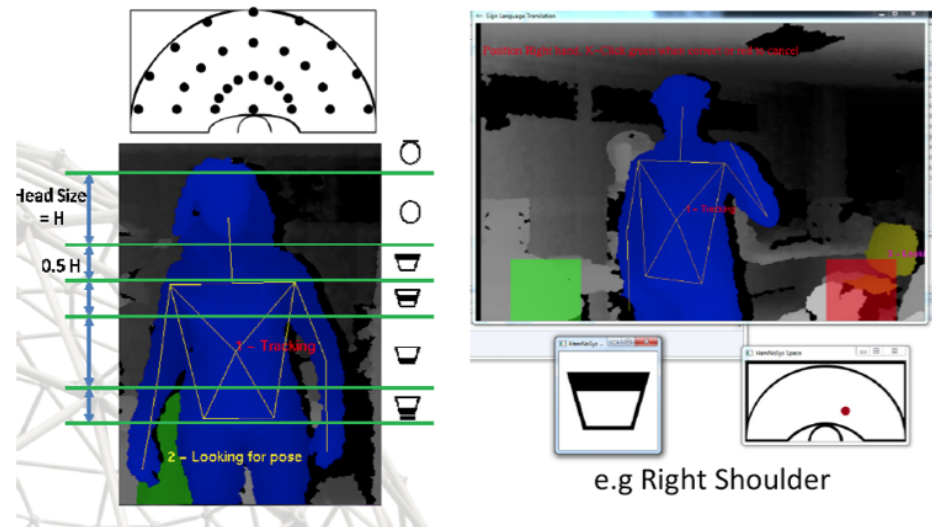
- Better technical infrastructures at test sites, e.g. schools
- Automatic recognition of signed answers (lexical level)
- Data base with data across sign languages > platform for research and discussion among researchers and teachers
- Touch-screen technology for comprehension test

(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 immediatly 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
- www.micro-active.com/a-wm/fvencoder/bsl-vt-demos.htm

Thank for your attention

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