

BRIEFING SHEET

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SIGN LANGUAGE TESTING

This briefing sheet answers the following questions:

- What are sign languages and who uses them?
- What are common misconceptions about sign languages and sign language testing?
- Why assess sign languages?
- What unique factors must be considered in sign language testing?

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WHAT ARE SIGN LANGUAGES AND WHO USES THEM?

Sign languages are natural languages which express meaning visuospatially through the movements of hands, arms, torso, and head, in combination with eye-gaze and facial expressions.

Sign languages are complete, fully developed languages with unique linguistic properties such as their own grammar, lexicon, and pronunciation.

It is estimated that there are more than 200 sign languages used by around 70 million deaf people worldwide.

Sign language users are diverse:

- **Native signers** - A small percentage of deaf people are exposed to a sign language from birth by their deaf parents.
- **Children of deaf adults (CODAs)** - CODAs may be deaf or hearing, and many of them will be native signers. The language acquisition of children acquiring a sign language from their deaf parents follows a similar timeline as the one of children acquiring a spoken language. CODAs may also grow up as bimodal bilinguals, acquiring a signed and a spoken language.
- **Non-native deaf signers** - Most deaf people (about 90-95%) grow up in hearing families and may not acquire a sign language until they enter school, or in some cases not until adulthood. Consequently, deaf people have widely varying signing skills due to their different language backgrounds.
- **Delayed first language signers** - Some late learners of sign language may have language deprivation due to delayed exposure to a first language.
- **Second language deaf signers** - Other deaf people may have had access to a spoken or written first language and acquire a sign language as a second language.
- **People with difficulties understanding or producing speech** - Some people with difficulties use fully grammatical sign languages used by deaf people; however others are taught simplified sign systems which only borrow signs from sign languages and do not have the same complex visuospatial grammar.
- **Second language hearing signers** - Hearing people may choose to learn a sign language as a second or third language.

WHAT ARE COMMON MISCONCEPTIONS ABOUT SIGN LANGUAGES AND SIGN LANGUAGE TESTING?

- *Sign languages are international.* Untrue: Although deaf people may use International Sign (a pidgin sign language) or gestures to communicate across language borders, actual sign languages are restricted to their respective geographic regions. For example, most people in the UK and the US speak English, but British Sign Language (BSL) and American Sign Language (ASL) are different languages.
- *Sign languages are not as rich or complex as spoken languages.* Untrue: Sign languages are fully developed natural languages which are as rich and complex in terms of grammar, lexicon, and regional variation as their spoken counterparts.
- *Sign languages are easier to learn than a spoken language.* Untrue: Learning a sign language takes as much skill and dedication as learning a spoken language.
- *Sign languages are a form of gesture or mime.* Untrue: Sign languages use the same language dedicated areas of the brain as spoken languages, and they are processed differently from gesture, mime, and other simplified sign systems.

Learning a sign language is as complex as learning a spoken language, and children acquiring a sign language from birth follow a similar developmental timeline as children acquiring a spoken language.

- *Sign language tests are a type of test accommodation.* Untrue: Sign language tests are tests in a signed language. The test items and norms are created for signers and not translated versions of spoken language tests. This is different to providing special accommodations for deaf or hard of hearing people, who may for example require a sign language interpreter when they take a test of a spoken language.
- *Spoken language tests are valid when translated into sign language.* Untrue: Sign language tests need to be developed and validated independently (although an existing test for a spoken language may be adaptable for a sign language).

WHY ASSESS SIGN LANGUAGES?

Sign language testing has the same aims as spoken or written language testing: to assess language competence for different purposes. Sign language assessment purposes span three main settings:

- **Educational**, e.g., to monitor language progress in children, to assess signing competency in hearing adult L2 learners, etc.
- **Research**, e.g., to develop automatic sign language recognition systems, to compare language development between signed and spoken languages, etc.
- **Clinical**, e.g., to diagnose a language disability or brain disorder (often in conjunction with assessments of cognition), to monitor change over time, etc. The assessment of language disorders is complex due to the widely varying language backgrounds of deaf or hard of hearing people outlined above. Careful consideration of language background and quality of language exposure is essential to avoid overlooking or misdiagnosing disorders.

WHAT UNIQUE FACTORS MUST BE CONSIDERED IN SIGN LANGUAGE TESTING?

- Sign language tests generally cater to much smaller communities of language users compared to spoken languages. For example, in the UK about 58 million people speak English, but only about 151,000 use British Sign Language, of which around 87,000 are deaf.

Sign languages are often under-researched and under-resourced compared to spoken languages.

- There are many resources for spoken languages such as corpora, frequency lists, teaching and assessment materials, or reference frameworks. These are often not available for sign languages.
- Sign language assessment often requires the use of video technology for test delivery and scoring.

When creating test items for sign language assessments, it is important to consider the following:

- **Avoid highly iconic signs.** Some signs have high iconicity which means that they closely imitate what they refer to. The meaning of these signs can sometimes be guessed by non-signers, so these items should be avoided.

- **Avoid items that can easily be gestured.** Some signs share a surface form with common gestures, e.g., signs that show how objects are used (such as writing with a pen or banging with a hammer) or signs that are produced by pointing at body parts (e.g., the BSL signs for 'nose' or 'ear').
- **Avoid items that are unfamiliar to deaf people.** For example, specific musical instruments may not have a lexical sign in many sign languages.
- **Be aware of the lack of extensive data for sign languages.** Data on iconicity, sign frequency, cultural familiarity, regional variation, or other aspects relevant for test development is often sparse or not available at all. Data may need to be collected before designing tests.
- **Be aware of lexical variation within each signed language.** There may be different signs used in different geographical regions or by different social groups.

In addition, sign language test developers may also find the following advice useful:

- Sign language tests should be trialled and normed on deaf populations for each signed language, as norms collected within one culture or language group do not automatically apply to another deaf population.
- Similarly, separate norms should be considered for native and non-native deaf signers, those with a delayed first language acquisition, and second language learners.