

# Smarter Balanced Assessment Consortium: Signing Guidelines

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## Smarter Balanced Assessment Consortium: Signing Guidelines

### Overview

#### Background

These guidelines outline specific recommendations for the use of American Sign Language (ASL)-based translation for the online delivery of Smarter Balanced assessments. Because there are various interpretations of what ASL means, for the purposes of this document, ASL means a natural visual language, where ASL-based item and task translation is intended to represent: signs that are content specific and used by the Deaf/hard of hearing community; spatial and grammatical features that allow visual processing; and some terms that may require English fingerspelling.

Deafness is not only a sensory input issue for assessment delivery, it also includes the possibility of a language barrier. ASL is the primary and preferred language used by the deaf in America today. Because deafness inhibits the acquisition of the spoken language, ASL is used with young deaf students in general communication in classrooms to manage the classroom, teach a broad range of subjects, and develop language skills. While written English is taught in classrooms with deaf students, it is often introduced using second-language strategies, building on ASL as the first language. (Research indicates that the early acquisition of ASL facilitates learning of the written form of English.) There are a number of different classroom experiences for deaf students. One end of the spectrum might be residential schools that primarily use ASL. The other end might be students in mainstream public school programs that use ASL interpreters for part of the day.

In addition, many deaf children are not exposed to an accessible language such as ASL until they enter school. Unlike their hearing peers who have acquired a spoken language through family interactions since birth, as many as 90 percent of the parents of deaf children do not use ASL and are unable to provide the early language exposure critical to “normal” language acquisition. Instead they often use gestures or other means to communicate with their young deaf children. This further inhibits language fluency in a first language (ASL), which affects the development of fluency in a second language (English). Because of the difficulty of learning a spoken language without hearing the language, use of English by deaf students is commonly behind that of native English-speaking hearing students.

#### Use of ASL for Assessments

For Smarter Balanced Assessment Consortium assessments, when the English language itself (contained within the stimulus, prompt, or response) is not the specific domain being assessed, an ASL translation of the assessment directions and items should be provided for deaf students. For purposes of these guidelines, it is the expectation that students are sighted and use the visual representation of ASL. Past administrations of tests at the state level have often used ASL interpreters in the classroom. Problems occur through scheduling issues; finding qualified, trained,

and certified interpreters; and providing adequate time for interpreters to preview and understand the material for interpretation. The primary concern in this approach is that variations in ASL translations between classrooms occur. Therefore, it is recommended that prerecorded ASL translations are made of the assessment content and that a computer deliver these translations. Assessment content that should be translated includes training/practice materials, log-in screens, assessment directions, reference materials (such as formula sheets), and assessment items. ASL translations will be stored in digital media (likely video files). Using prerecorded ASL translations will aid in a single, standardized translation of the content to be delivered. This method also allows for an editorial review of the ASL translations to assure translation accuracy and adherence to established ASL translation guidelines. Specific decisions about which particular content may or may not be translated to ASL are discussed in section 5: Policy Implications below.

## Developing Videos

ASL translations should be provided via video in parallel (side-by-side) with the written, English version of the assessment content. The video should be shown within the assessment delivery system in a video window. In contrast to providing read-aloud, where the text is highlighted as the words are read aloud, the ASL video should NOT highlight text on the written, English version. Highlighting will distract ASL users from concentrating on the video ASL translation. Any animated activity within the interface, but outside of the video presentation, during playback of the video would pose a particular distraction to these students; so, it should be avoided as well. The assessment delivery system should also be capable of delivering the text-to-speech (read-aloud) version of the English content for deaf or hard of hearing students who amplify the recording.

Video player recommendations: The video displayed should be at least 6 cm × 6 cm in size. It could be a square or vertical aspect. The frame rate should be greater than or equal to 20 frames per second (fps). The video should not block the default English visual representation. It is acceptable to place the video in a window that can be dragged over the English version. Controls for the video include pause/play and the ability to start playback from a point within the total video, which is usually done by use of a “scrubber”—a slider bar that lets the student select any point between the start and end of the video.

In the video, the background should be plain and contrast with the clothing worn by the ASL signer. Signers should not wear flashy clothing (avoid stripes or patterns), and should remove watches and jewelry. Proper lighting needs to be provided for a high-contrast image. Special attention needs to be placed on removing glare if the signer wears glasses, as meaning and emphasis is often conveyed through facial expression, including the eyes. There should be enough space above the head, below the waist, and to both sides of the signer to allow for signs to be clearly seen within the video frame.

While using a recorded video might be the current preferred method of delivering an ASL translation, consideration should be given to future implementations that may make use of an animated avatar. A study by Nimble Assessment Systems, Inc. (Russell, et al., 2009), showed that there was no significant difference in math scores for students using a human recording versus an avatar recording of the ASL content. Avatars offer the possibility of less-expensive content creation and are more easily modified than human recordings. However, the study provides evidence of a marked preference by ASL users for recorded human-signed presentation versus avatar-signed presentation of mathematics test items. The reason for this preference can be attributed to the fact that much of the language is communicated not only by specific hand gestures but also through facial expression and general body position. The lexicon of ASL is expressed manually; however, the upper face marks sentence types (e.g., question, conditional); the lower face is used for modifiers (adverbial morphemes); other grammatical markers (e.g., subject/object, anaphoric referents) are expressed

with eye gaze and body shifting; and grammatical assertion and negation are shown with head movements. The human recordings captured these nuances of the language far better than the avatar representation. Avatar movements are viewed as jerky and robotic by native ASL signers. However, signing avatars are improving, with some applications allowing the capability to rotate the avatar in three-dimensional space, which is an asset when viewing ASL in a two-dimensional format because a specific, fixed camera angle can make certain signs difficult to understand. Avatar programming also allows for setting facial expressions and eye-gaze direction. In either case, native ASL signers should be recorded or be part of the avatar programming cycle.

## Specific Guidelines

There has been little research performed on the effectiveness of specific ASL choices in the delivery of assessment content. Studies to date have focused on measuring the impact of delivering ASL translations of tests. Although it is difficult to provide many specific guidelines at this time, there are some guidelines that can be given on general approaches to content presentation for the deaf and hard of hearing.

### Graphics:

- Graphics and other visual elements will not have descriptions translated to ASL.
- Tally charts would have no sign representation for the tallies themselves.
- Words on diagrams/graphics are provided on demand by clicking on the word and viewing the ASL representation of the meaning of the English word(s).

**Tables:** Automatically sign the table title. Data within the table is available in ASL on demand by clicking on the English word within the table.

**Videos:** Videos that do not contain English voiceover audio do not need ASL translations. Videos that do have English will need ASL translations of the English. ASL translations need to be presented thoughtfully; since it is not possible to watch the translation and the video material simultaneously, the translation may impede comprehension of the material.

Videos with English voiceover audio will also need English subtitles for native English learners who can't hear (as one example of possible users). Subtitles should not be displayed by default, but should be available by turning them on with a button on or next to the video.

**Audio stimuli:** Language-based stimuli of auditory content will need to be presented in ASL and will require the availability of English subtitles. Auditory stimuli that require the student to hear the sounds (e.g., identify music, animal sounds) will not be accessible for some students and should not be presented to them.

## Translation Recommendations

English will be translated to ASL except where policy specifically prohibits the translation due to construct violation, which most frequently occurs when English is the domain being tested.

In an item specification, a clear sense of what evidence is required for the item (the concepts) should be evident. If a specific English word or English spelling is in whole or in part being measured, the specification should clearly indicate which word(s).

All content that is translated into ASL will need to be reviewed by content experts along with ASL experts (or a native ASL speaker who is a content expert) to ensure that the vocabulary used does not violate the construct being measured.

ASL is a unique language with its own vocabulary and grammar, and it is a visual language. There have been several attempts to create online dictionaries for a number of domains, including mathematics and science (e.g., RIT Science Signs Lexicon: <http://www.rit.edu/ntid/sciencesigns/>, Signing Math Dictionary by VCom3D, Texas Math Sign Language Dictionary: <http://www.tsdvideo.org/>). These dictionaries/glossaries all take a common approach, which is to select an English word and show a specific sign to match it. This approach assumes a one-to-one correlation and does not account for the context of the use of the term. In many cases, terms are simply finger spelled in English, meaning the term is not translated to ASL. It would be easy to convey the incorrect meaning by relying on these glossaries. As an illustration, ASL employs 28 numbering systems, using different systems depending on the context. If a simple glossary stated you must use one specific numbering system, the incorrect contextual ASL use of the number is likely to occur.

Translation from English to ASL should be conceptual and translate to the desired meaning, rather than word-by-word translation. This is often referred to as “dynamic equivalence translation” (Eugene Nida), which is defined as conveying meaning from the source language (in this case, written English) to its equivalent in the target language (ASL).

To avoid word-by-word translation problems, it is recommended that an ongoing work group be formed to review ASL translation issues and that the decisions made by this work group form the foundation for current and future translations. Using existing items, the group will establish translation boundaries (patterns of contextual vocabulary that can be extrapolated to guidelines). As an exercise, the group may start by creating questions in ASL from the item specification guidelines and translating those questions to English. This would provide direction for understanding the concepts being measured instead of understanding the use of English. Decisions would be codified in both written English and video ASL versions and posted to a central translation support Web site. Specific guidelines could include recommendations for signing complex mathematical equations. Guidelines could indicate when you would sign an operator instead of indicating a difference between numbers, or when to finger spell specific English words.

Work group description: A group of native ASL signers and English-speaking content experts will need to determine contextual translation issues. The group should represent a national sampling of native ASL signers as well as educational interpreter experts who have mainstream classroom experience. It may be advantageous for some of the English-speaking experts to have another language as their primary language. The English-speaking content experts do not need any ASL experience. Experience in assessment and K–12 education is preferred. Meetings should be held face-to-face four times a year and will include the creation of guidelines as well as the consideration of concerns raised in earlier assessment administrations.

Currently there are certification evaluations administered by the National Registry of Interpreters for the Deaf (RID) for interpretation, but not for translation. Interpreters take a live delivery of spoken English and immediately translate the meaning to ASL to the best of their ability. Translation of the English written text for use in assessment might require a higher level of subject expertise and native language acuity, as well as the ability to adhere to established Smarter Balanced guidelines. As of February 2012, there is no test/certification for translation between ASL and English, though interpreters often perform this task. Given the volume of work expected, there may be a logistical problem acquiring qualified translators to translate all the items available in a Smarter Balanced assessment. Consideration may need to be given to translating a subset of the total pool of items in

the near term, with the notion that all items would eventually be translated. A consistent team of ASL translators will add to the consistency of the ASL translations.

Specific translation procedures are expected to be described in future Smarter Balanced work groups and may include methods that require a translation back to English to ensure meaning and use of vocabulary.

## Policy Implications

Specific policy decisions will need to be made regarding when an ASL translation would NOT be provided. Those contexts may include the following:

- ELA passages: Excluding ELA passages might also mean that referenced and restated sentences from the passage within an item would not be signed.
- Specific English vocabulary words (example: “The word ‘vivid’ in this passage...”): Could the word be finger spelled?
- English spelling constructs: Is finger spelling allowed, or are the specific letter forms being assessed (this would have implications for braille users as well)?
- Mathematical equations: Is decoding the written notation being assessed? Are there contexts when it makes sense to translate equations (such as in a stimulus) to sign language, and other contexts when you should not translate equations (in a prompt or answer choice)?
- Audio stimuli: Are there targets that require specific sound identification or recognition? If so, what would be the alternative to students who can’t hear?
- Should Smarter Balanced also consider providing some form of signed English (as distinct from ASL) to students who are taught to use and understand signed English? Signed English could make some content accessible for students who are deaf/hard of hearing that understand English but have difficulty decoding written English, though this is a small subset of an already small group of students.
- Speaking and listening: Policy needs to be set to understand the meaning of speaking and listening. Does that mean literally speaking English out loud or hearing spoken English, or does it mean understanding a complex amount of information or using language to convey organized meaning?

## References and Resources

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