



## Accessibility of tests for individuals with disabilities within a validity framework

Eric G. Hansen<sup>a,\*</sup>, Robert J. Mislevy<sup>b</sup>, Linda S. Steinberg<sup>c</sup>,  
Moon J. Lee<sup>d,1</sup>, Douglas C. Forer<sup>e,2</sup>

<sup>a</sup> *ETS, Rosedale Road, Mailstop 13-E, Princeton, NJ 08541, USA*

<sup>b</sup> *Department of Measurement, Statistics, and Evaluation, University of Maryland-College Park, Benjamin 1230-C, College Park, MD 20742, USA*

<sup>c</sup> *228 W. Highland Ave, Philadelphia, PA 19118, USA*

<sup>d</sup> *Washington State University, Edward R. Murrow School of Communication, P.O. Box 642520, Pullman, WA 99164, USA*

<sup>e</sup> *ETS, Rosedale Road, Mailstop 15-T, Princeton, NJ 08541, USA*

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### Abstract

There is a great need to ensure that language tests are accessible to individuals with disabilities. Yet accessibility features can sometimes conflict with the validity of test scores. In some cases the nature of the conflict seems obvious, yet in other cases there is controversy, such as that concerning the use of a “readaloud” accessibility feature on tests of reading. What is needed is a more rigorous approach for reasoning about the validity implications of accessibility features. The approach described in this article seeks to integrate thinking about accessibility, task design, and validity – all in a framework of sharable terminology, concepts, and knowledge representations. We believe that such a framework can allow one to more accurately and quickly identify the validity-related consequences of design changes that are intended to improve accessibility for individuals with disabilities. Such a framework may

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\* Corresponding author. Fax: +1 609 734 5822.

*E-mail addresses:* [ehansen@ets.org](mailto:ehansen@ets.org) (E.G. Hansen), [rmislevy@umd.edu](mailto:rmislevy@umd.edu) (R.J. Mislevy), [lss@temple.edu](mailto:lss@temple.edu) (L.S. Steinberg), [moonlee@wsu.edu](mailto:moonlee@wsu.edu) (M.J. Lee), [dforer@ets.org](mailto:dforer@ets.org) (D.C. Forer).

<sup>1</sup> Fax: +1 509 335 1555.

<sup>2</sup> Fax: +1 609 734 5010.

permit greater inclusion of individuals with disabilities or other sub-populations without invalidating test results.

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## 1. Introduction

There is a great need to ensure that language tests are *accessible* to individuals with disabilities. It is a matter of fairness and equity that each test taker receives a fair opportunity to demonstrate what he or she knows and can do. In the context of educational and psychological *testing*, accessibility features are often implemented as “*accommodations*”, i.e., as pre-approved alterations to the default (or standard) testing conditions. For example, an individual with low vision may require enlarged fonts, screen magnification, or modified color or contrast. An individual who is blind may require that the information be read aloud via a live reader, prerecorded audio, or synthesized speech.<sup>3</sup> If an individual who is blind reads braille, then he or she may be able to benefit from use of a hard copy braille or a refreshable braille display.<sup>4</sup> Accessibility features might also be implemented as “*universal design*” features that could be made available more broadly than accommodations and, indeed, typically would not require prior approval at all.<sup>5</sup> However, it is possible for accessibility features to undermine the validity of a test (Willingham et al.,

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<sup>3</sup> Synthesized speech (text-to-speech) approaches may be divided into two categories. First, built-in text-to-speech (a “self-voicing” application) provides speech output as part of the application itself. Second, screen reader programs are commercial software packages that allow a person who is blind (or has certain other specific disabilities) to interact with a variety of other software – such as word processors, spreadsheets, and Web browsers – using text-to-speech technology. Using a screen reader, the user can hear the content being worked with (e.g., the Web content or word processing text content) as well as hear information about the controls on the application (e.g., menus, buttons, dialogs). The more capable screen reader packages, such as JAWS for Windows (or JFW, Freedom Scientific) or Window-Eyes (GW Micro), provide a very rich set of functionalities. One can choose between a variety of speech characteristics (rate, gender, voice, etc.) and navigate through passages of paragraphed text (word-by-word, character-by-character, etc.), as well as through more complex content, such as tables, forms, and frames.

<sup>4</sup> A refreshable braille display has hardware that raises and lowers braille dot patterns on command from a computer. Users read the braille dot patterns by moving their fingertips across the braille panel, much as they would read the braille dot patterns on paper. Unlike the static medium of paper, a refreshable braille display is dynamic; it “refreshes”. The dot patterns change under control of the user to display new content.

<sup>5</sup> “The term ‘universally designed assessments’ refers to assessments that are designed and developed from the beginning to be accessible and valid for the widest range of students, including students with disabilities and students with limited English proficiency. [...]As we learn what universally designed assessments are like, we must recognize that they will not eliminate the need for all accommodations, but can significantly reduce the need for them and will allow the use of accommodations without threat to the validity and comparability of the scores”. (National Council on Educational Outcomes, 2004).

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