



## Exploring the use of dynamic language assessment with deaf children, who use American Sign Language: Two case studies



Wolfgang Mann<sup>a,b,\*</sup>, Elizabeth D. Peña<sup>b</sup>, Gary Morgan<sup>a</sup>

<sup>a</sup>City University London, United Kingdom

<sup>b</sup>The University of Texas at Austin, United States

### ARTICLE INFO

#### Article history:

Received 25 June 2013

Received in revised form 6 May 2014

Accepted 16 May 2014

Available online 26 May 2014

#### Keywords:

Dynamic assessment

Fast mapping

Modifiability

Deaf

Sign language

ASL

### ABSTRACT

We describe a model for assessment of lexical-semantic organization skills in American Sign Language (ASL) within the framework of dynamic vocabulary assessment and discuss the applicability and validity of the use of mediated learning experiences (MLE) with deaf signing children. Two elementary students (ages 7;6 and 8;4) completed a set of four vocabulary tasks and received two 30-minute mediations in ASL. Each session consisted of several scripted activities focusing on the use of categorization. Both had experienced difficulties in providing categorically related responses in one of the vocabulary tasks used previously. Results showed that the two students exhibited notable differences with regards to their learning pace, information uptake, and effort required by the mediator. Furthermore, we observed signs of a shift in strategic behavior by the lower performing student during the second mediation. Results suggest that the use of dynamic assessment procedures in a vocabulary context was helpful in understanding children's strategies as related to learning potential. These results are discussed in terms of deaf children's cognitive modifiability with implications for planning instruction and how MLE can be used with a population that uses ASL.

**Learning outcomes:** The reader will (1) recognize the challenges in appropriate language assessment of deaf signing children; (2) recall the three areas explored to investigate whether a dynamic assessment approach is sensitive to differences in deaf signing children's language learning profiles (3) discuss how dynamic assessment procedures can make deaf signing children's individual language learning differences visible.

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## 1. Introduction

Over the last decades, dynamic assessment (DA) of language skills has seen growing interest by clinicians as an alternative to standardized testing methods (Tzurriel, 2000). DA is particularly useful as a diagnostic tool for work with children from non-mainstream backgrounds, whose cultural and linguistic experiences may differ from those represented by the standard test content. It has been shown that through mediation, children can learn how to develop and apply linguistic skills within language-related tasks (Peña, Reséndiz, & Gillam, 2007). This process can reduce possible effects of

\* Corresponding author at: Division of Language & Communication Science, City University London, Northampton Square, London EC1V 0HB, UK. Tel.: +44 20 7040 0189; fax: +44 20 7040 8577.

E-mail address: [wmann08@austin.utexas.edu](mailto:wmann08@austin.utexas.edu) (W. Mann).

test bias on children from diverse cultural and linguistic backgrounds. Despite its growing popularity and recognition, DA of language is still fairly new and most research to date has been carried out on typically hearing children. Work with children with hearing impairment is limited and has mainly focused on assessment of children's cognitive skills (e.g., Keane, 1987; Olswang & Bain, 1996; Katz, 1984; Lidz, 2004; Tzuriel & Caspri, 1992). More recently, this work has been extended to the use of DA within a language-learning context related to this population by Asad, Hand, Fairgray, and Purdy (2013), who evaluated spoken English narrative language learning in English by three children with hearing impairment between the ages of 7 and 12 years. The authors applied DA to successfully differentiate language learning profiles, using a narrative task, among three children with reduced input due to hearing loss. Two of the children demonstrated pre-post changes on oral narrative, but one did not. The child who demonstrated no pre-post changes also demonstrated low responsivity to mediation and low modifiability during the teaching phase of the DA. In this paper, we build on that work to apply DA to the assessment of deaf children, who use American Sign Language (ASL). This offers an alternative for assessing language learning potential in linguistic minority groups where little normative data are available.

### 1.1. Challenges in assessing deaf children's language

Two major challenges in appropriate language assessment of deaf children, who use sign language, include variability in input/environment and shortage of appropriate sign language assessments. The environment and language experience of children who are deaf may vary considerably, ranging from signing deaf parents to hearing parents who communicate only through speech. Additionally, there are few reliable and valid tests available to examine deaf children's signed language abilities.

Approximately 5–10% of deaf children grow up with at least one deaf parent (Mitchell & Karchmer, 2004). These children generally receive regular and consistent exposure to language (i.e., sign) from a very young age and are able to reach early developmental milestones at rates that are comparable to typically developing hearing children (see Chamberlain, Morford & Mayberry, 2000; Morgan & Woll, 2002; Schick, Marschark & Spencer, 2004; Woolfe, Herman, Roy, & Woll, 2010, for reviews). The remaining 90–95% of deaf children are born into hearing families with little or no previous experience with deafness, who require different kinds of supports to provide their children with access to signed or spoken language (Lederberg, Schick, & Spencer, 2013). In the early years these children tend to receive no or little sign language exposure (if parents decide to use signed communication approaches), which results in delays in their sign language development in general and sign vocabulary development specifically (Lederberg & Spencer, 2009). Many children show growing ability to perceive auditory information and acquire spoken language as a result of earlier intervention and identification of hearing loss and improved technologies (e.g., digital hearing aids, cochlear implants). Yet, a considerable number of these children remain significantly delayed in spoken language (Lederberg, et al., 2013). Thus, a particular challenge in the context of early language acquisition is determining the extent to which lack of exposure/quality of language input and/or access to alternative models contributes to sign language-learning difficulties.

In contrast to the large number of tools available for assessing spoken languages, there are very few tests (e.g., British Sign Language-Receptive Skills Test, Herman, Holmes, & Woll, 1999; British Sign Language-Productive Skills Test, Herman et al., 2004) that have been designed specifically for deaf children, who use sign. This shortage along with the gap between assessment and intervention limits clinicians and teachers in their efforts to accurately determine children's levels of language ability, to diagnose additional disabilities, and to design appropriate support measures (Mann, Roy, & Marshall, 2013). The lack of available measures is mainly due to difficulties in test development and standardization related to the size and heterogeneous nature of the population of deaf signers. Existing standardized tests for spoken/written language, which have been developed and normed on hearing children, are of questionable validity when used with children who have not yet mastered a consistent and effective means of communication (Lidz, 2004) or who grow up with sign language as their first language.

An additional concern regarding the use of standardized tests with deaf signing children is the potential bias introduced when differences (or low performance) are interpreted as disorders. For instance, even the act of test-taking itself, requires a child to have sufficient language to comprehend the test instructions enough to know what s/he is supposed to do. Given the language delay many deaf signing children experience, their awareness/familiarity with the content and/or wording of tests may be affected. Findings from a recent study on the effects of ASL as accommodation for deaf/hard of hearing takers of standardized math/reading assessment tests showed no significant differences between those who did and did not receive ASL accommodations (Cawthon, Winton, Garberoglio, & Gobble, 2011). These findings suggest that mere translation of test instructions of tests designed for a hearing population is unlikely to address the underlying lack of experience with the language of test instruction.

Even when sign language assessment is specifically developed for deaf children, who sign, some challenges remain, including the varying signing skills of the test administrator and the question of availability of the test norms.

Professionals conducting language assessments in ASL are not usually native signers, and many do not have a well-developed knowledge of the language (Mann & Prinz, 2006). As a result, they may misinterpret signs they do not recognize as incorrect. This is particularly problematic on tests that assess productive skills. Test norms of a sign language assessment may not be equally appropriate for all test takers, given the variability in deaf children's signed language experience. For instance, sign language tests that have been developed and normed on children with natural sign language input from birth may be less accurate in distinguishing children who began learning sign language (e.g., ASL) later or those using artificial

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