Exploring Instructor and Student use of an American Sign Language E-Assessment System

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ABSTRACT
In this paper, the authors examine how instructors used an online assessment environment designed to evaluate the performance of undergraduate students enrolled in American Sign Language (ASL) courses. 640 undergraduate ASL students at a large Midwestern university participated in this study. The findings suggest that instructors varied greatly in the manner in which they used the e-assessment system both in terms of the amount of time spent evaluating student assessments and in the proportion of total assessments scored. Furthermore, students' responses to an open-ended survey on their experiences with the system generated useful insight to guide future design. Finally, implications for the design and integration of world language e-assessment environments are discussed.

Keywords: American Sign Language (ASL), E-Assessment, E-Assessment Systems, Online Assessment Environment, System Design

INTRODUCTION
An important question in world language education concerns maximizing the effectiveness and efficiency of instruction. Technology is viewed as a primary avenue to support language acquisition and the teaching and learning process. Improved hardware processing capabilities and increased bandwidth speeds, paired with the availability of powerful but inexpensive peripherals, create a largely untapped potential to transform language instruction. However, to date, few examples exist that demonstrate how affordances such as connecting students and teachers, and supporting assessment in the target language, can be harnessed to support instruction (Miller, Hooper, & Rose, 2005).

Technology integration questions are particularly germane in American Sign Language (ASL) education, a field that has experienced dramatic growth in recent years (Welles, 2004) and faces particularly complex challenges in...
measuring learner performance (Kemp, 1998). A common approach to assessing ASL involves evaluating videotaped recordings of student performance, a practice that becomes increasingly unmanageable as course enrolments increase. Although five or ten videos may not represent a problem, implementing a system that is valid and reliable for larger groups becomes challenging. When thousands of students are involved in a program each academic year, ensuring that students receive timely (or immediate) formative feedback to improve performance becomes difficult (Miller, Doering, & Scharber, 2010).

Adding to these management issues is the inherent communication problem between ASL instructors, most of whom are deaf, and students, the vast majority of whom are hearing. ASL is often taught through immersion approaches in which communication between students and instructors is encouraged only in the target language. Hence, when communication between an instructor and a student occurs in writing (e.g. providing written feedback), communication occurs in a non-native language (i.e. English) for at least one party. Such communication often limits the message sophistication and may exacerbate student frustration.

**ASL E-Assessment**

To enhance the nature of postsecondary ASL instruction and assessment, we developed *AvenueASL*: an integrated e-assessment system to capture, evaluate, and manage ASL learner performances. The system enhances the efficiency of the existing assessment process using innovative solutions that are reliable, valid, cost-effective, and efficient. The online environment enables students to capture videos of sign-language assessment tasks and individually build online portfolios for monitoring progress of their performances over time. These portfolios allow students and instructors to establish learning objectives, document language proficiency, and demonstrate maturing communication abilities, ultimately encouraging students to be more reflective regarding their ASL communication skills (Lupton, 1998). Furthermore, instructors can efficiently provide multiple forms of evaluation feedback (e.g., text, numeric, video, etc.) based on the needs and learning styles of individual students.

These innovations solve an important practical problem and create significant instructional potential for postsecondary ASL education. Together, the methods used to assess student performance (see Figure 1 and Figure 2) and the techniques used to gather, store, and deploy progress data create a system that is technologically-sophisticated and pedagogically-sound, resulting in improved ASL learning and instructional assessment (Miller et al., 2008).

In previous research we reported that student use of the system was positively correlated with students’ course grades: students who practiced regularly with the *AvenueASL* software achieved higher course grades than less frequent users (Miller et al., 2008). The present study extends previous research by exploring and analyzing how ASL course instructors used the software. Effective integration of this type of software is likely to differ from more traditional designs as assessment software requires adherence to interaction design principles and pedagogy, in addition to addressing how instructors use the software. Therefore, we investigated how instructors used the *AvenueASL* software in order to identify implications for future effective practice, design modifications, and integration. Specifically, we were interested in the following questions:

1. Can patterns of teacher behavior be identified from an e-assessment system database? The behavior patterns we were most interested were those that impact the efficiency and effectiveness of instruction, including time spent in providing feedback when reviewing students’ graded performances. We investigated whether instructors varied in the percentage of tests they graded, the amount of time they spent grading, and whether course grades varied across instructors. Research examining
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