

Partners



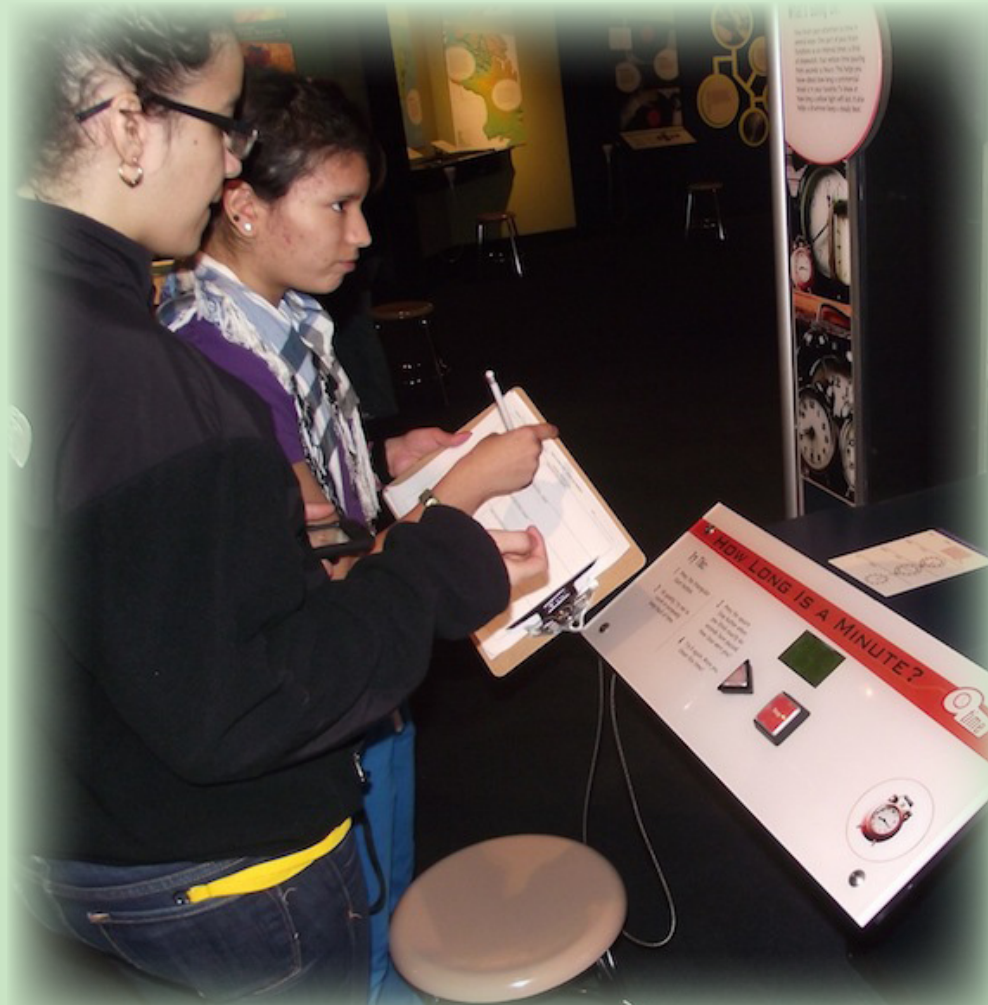
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Web Site

To access the Pilot Test Evaluation Report and Video Clips of families and school groups using the mobile dictionaries, go to http://signsci.test.terc.edu/MoS_SMSD/index.htm



The Handheld Signing Math & Science Dictionaries for Deaf and Hard of Hearing Museum Visitors Research Project

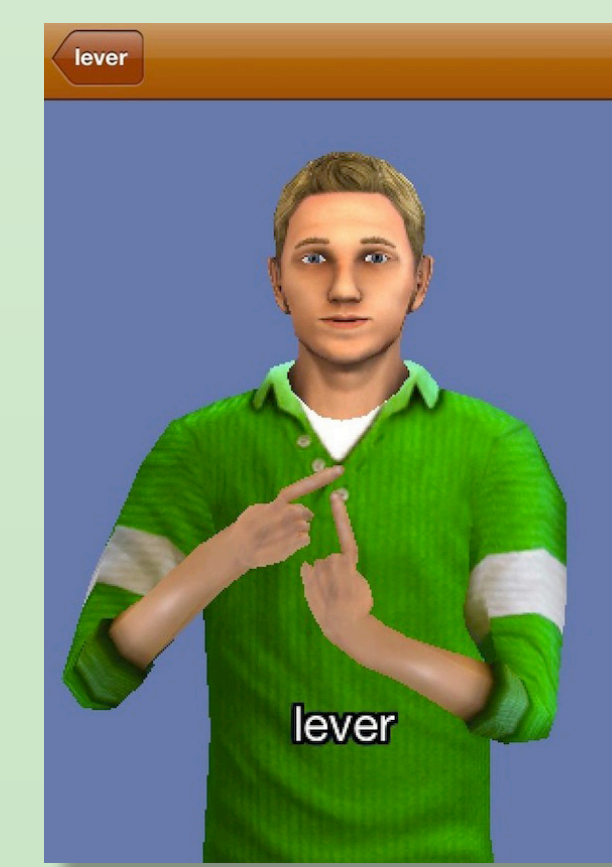
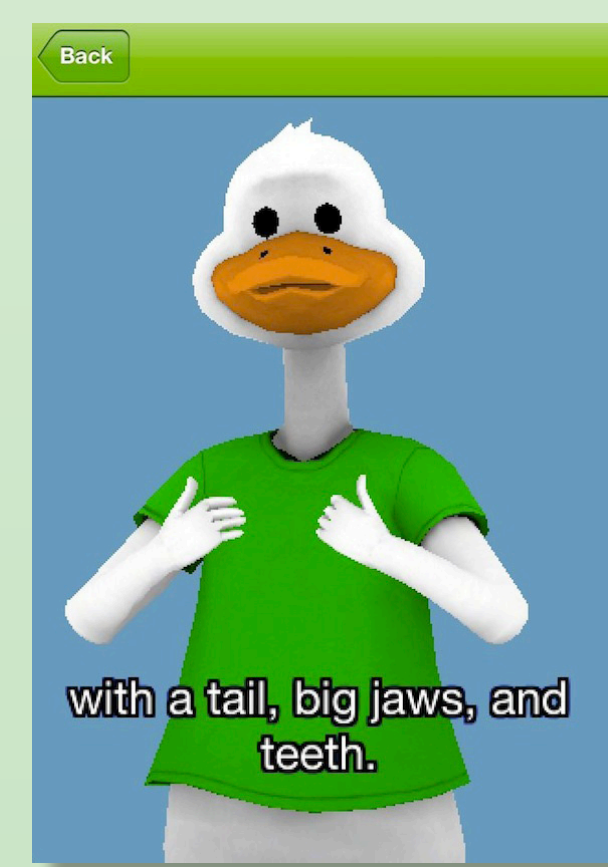
(Award #1008546)

Overview

TERC and MoS researchers are studying how family and school visitors integrate iPod Touch versions of the Signing Science Pictionary (SSP), Signing Science Dictionary (SSD), and Signing Math Dictionary (SMD) into their museum experience. They are primarily interested in the impact of dictionary use on:

1. Knowledge or understanding of STEM exhibit concepts or topics;
2. Engagement or interest in STEM exhibit concepts or topics.

Exhibits that are focus of the study are Science in the Park and Take a Closer Look. They were selected because of their appeal to a wide range of visitors and focus on inquiry.



Features of the Handheld Dictionaries

Each dictionary embeds the three principles of Universal Design for Learning [UDL]. Visitors can choose from a group of Avatars; select American Sign Language (ASL), Signed English (SE), or human voice; access a term using a Search box or letter list; view a part of speech, illustration, entire text block, or individual words; and change the signing speed and size of the text.

Research Questions

1. How do visitors, ages 5-12+ who are deaf or hard of hearing, integrate handheld dictionaries into their museum learning experience during family visits?
2. How do visitors, in grades K-8+ who are deaf or hard of hearing, integrate handheld dictionaries into their museum learning experience during school visits?
3. What kinds of STEM learning are made possible with use of the dictionaries?

Methodology: Family Visitors

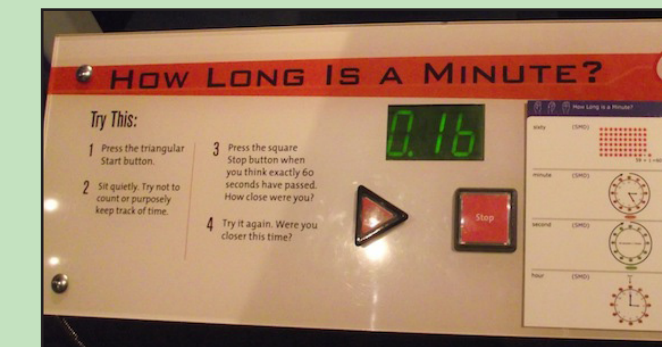
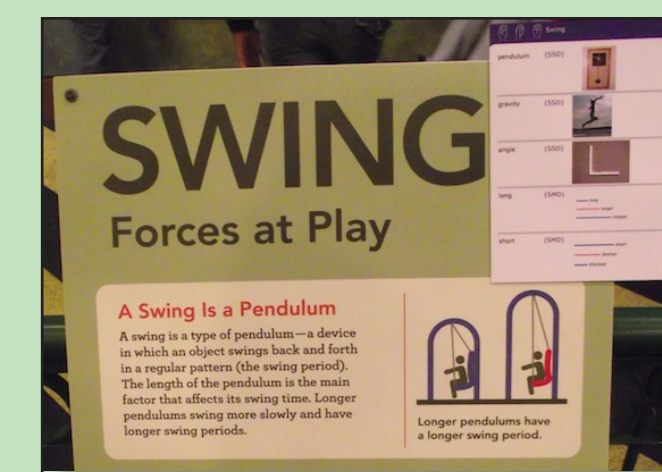
Families meet at an exhibit area where they are given an iPod and introduced to the dictionary features. They then visit four activities, two with Word Lists and two without Word Lists, and visit other activities in the exhibit area as they wish. The Word Lists were developed during pilot testing and include key terms for the activity that are also in the dictionaries.

Methodology: School Visitors

A few days prior to the visit, researchers visit the classroom to introduce the dictionaries. On the day of the visit, groups are assigned to an exhibit area based on teacher interviews and divided into pairs. Each pair is given an iPod and works together to do activities with Word Lists and to fill out activity sheets.

Instruments

- Observation Logs
- Video Logs
- Parent & Child Interview Protocol
- Follow-up Surveys



Impact Indicators

- Observed and Video-documented Engagement Behaviors and Learning
- Self-reported Learning (new signs and new science content knowledge)

Deliverables

- Conference Presentations
- Journal Articles
- Final Report

Challenges

- Enabling visitors to identify key terms that are important for doing or understanding an activity and are included in one of the dictionaries.

Future Research

We are interested in partnering with other institutions to conduct further research related to the mobile dictionaries and to conduct initial research related to use of a mobile communication App in informal settings. This App is delivered on an Android device. It provides “on the fly” signing of text typed into a keyboard and of human voice spoken into a microphone and translated into text.

