SignWritting App: A Useful Educational Tool

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Presented at the SignWriting Symposium: 7-23-2014

Abstract: The SignWriting App is an educational tool to help students, teachers, parents, and therapists teach SignWriting. The app allows the ability for the user to learn SignWriting with flash cards and test their knowledge with quizzes. There are links to SignWriting organizations around the world, as well as a link to the SignPuddle symbol bank. This app was built using multiple computer language platforms including: Objective C, CSS and HTML. The data was organized using JavaScript Object Notation. The flashcards were created using Photoshop and royalty free, high-resolution images. This App is available for download free of charge in the Apple App Store.

Introduction: SignWriting, developed in 1974 by Valerie Sutton, uses symbols of the hands, face and body in their special arrangement to provide a system of writing for the hearing impaired population. Sign Language relies on facial expressions, shifts in posture and movements to convey compound words in short phrases. Prior to SignWriting, systems, such as Stoke notation, were used to convey Sign Language on paper. With the introduction of the SignWriting system designed by Sutton, the addition of movement and facial expression could be added to characters providing a more comprehensive tool for the user. Numerous glyphs were created to represent the hand, face, expression and movement. Figure 1 shows a sample of glyphs, which represent hand movement.
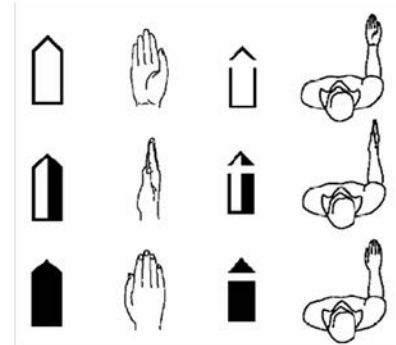

Figure 1: Glyph of palm orientation.
Image courtesy of Valerie Sutton

As technology advanced, it became a possible to write computer code for the glyphs, and Sutton released the International SignWriting Alphabet 2010 under the SIL Open Font License.[1] Further access to the written form of SignWriting was made available by Steve Slevinski, under the GNU General Public License, when he released a MediaWiki Plugin for viewing SignWriting within MediaWiki.[2] With the invention of interactive tablets, iPads and iPhones; creating, designing and building an app for students to use as an educational tool appeared to be the next step in providing increased awareness and access to SignWriting.

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[1] Valerie Sutton. "Sutton's SymbolBank: International SignWriting Alphabet (ISWA 2010)". Movementwriting.org. Retrieved 2012-05-21

[2] "Extension:SignWriting MediaWiki Plugin". MediaWiki. Retrieved 2012-05-21.

Procedure: There are several books published which use pictorial images, words and the corresponding symbols to help educators and students teach SignWriting. A list of words, which were commonly found within these resources, was compiled and reviewed with Adam Frost. The number of words was limited to two hundred in order to maintain a small file size on the app, which would not require WiFi to download, would not need a server to maintain, would be self contained on the users device, and would not use a significant amount of the storage space on the device. These words

Figure 2: Creating the flashcards in Photoshop

were chosen because they are common words for communication of basic needs, such as: feeding, bathing, dressing, colors, and weather. Once the list of words was decided, high-resolution royalty free images were obtained to provide the user an image relating to the word and SignWriting characters. Through Photoshop the images, words, and SignWriting characters were combined to make a flashcard (figure 2).

Figure 3: Categories

A flashcard was made for each word and placed into thirteen different categories. The categories included: Alphabet, Animals, Bedtime, Clothes, Color, Family, Feelings, Food, Money, Numbers, Places, Time, and Weather. These categories are easily accessible on the home screen of the app for the user (figure 3). Once the user taps on the category a new screen is loaded which displays the flashcards within the category (figure 4). The flashcards can be easily scrolled through when a user swipes across the device.
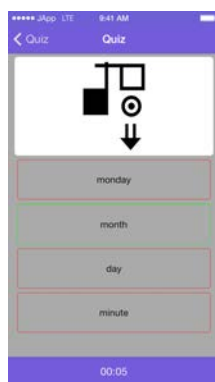

Figure 4: Flash Card

Figure 5: Quiz

Once the images were completed, they were then placed into the app by serializing information about their category and file name into JSON data and reading the data back on the iPad or iPhone. The About, Search and pages accessible from the more screen (figure 6) were formatted using HTML and CSS for the text. The framework of the app was built using Objective C, which allowed for an interactive quiz to be included in the app. The quiz was designed to test the users knowledge on images, letters or numbers, which were included in the flashcards (figure 5).
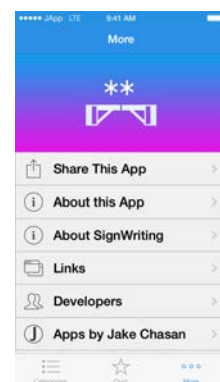

Figure 6: More

Conclusion: Through the use of collaborative efforts, modern technology, multiple computer languages and Photoshop, SignWriting as been brought to the palm of the users had in the form of an interactive app available for download free of charge to the user from the Apple App Store.

Sources:

1. "Extension:SignWriting MediaWiki Plugin". MediaWiki. Retrieved 2012-05-21.

2. Valerie Sutton. "Sutton's SymbolBank: International SignWriting Alphabet (ISWA 2010)". Movementwriting.org. Retrieved 2012-05-21