Development and Usability of a Samoan Vocabulary Mobile App

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About Me

- Master’s Student Learning Design and Technology
- Community Desk Coordinator
- Samoan Background
- Interested in designing a mobile vocabulary app
Audience Poll

Have you built or help anyone developed an app?

Yes

No
Audience Poll

Do you have any experience with Samoan language?

Yes

No
Problem

- Loss of culture, language, and its roots
- 20,000 Samoans living on the island of Oahu alone
- Learning about the Samoan culture and language
- Very few mobile application
Purpose

The purpose of this usability study was to develop and evaluate the ease of use of a Samoan vocabulary mobile app for beginner-intermediate Samoan students at a large university of Hawaii.
Goal

- Develop a user-friendly Samoan language mobile application
- Examine the usefulness and effectiveness of the mobile app
- Improve the ease of use of the application
Design and Development

Wireframe

Start Screen

- Samoan Vocabulary App
  - Start

Content Screen

- Beginner
- Intermediate
- About
- Resources

Beginner Screen

- Back
- Home

Intermediate Screen

- Back
- Home
- Vocabulary
- Flashcards
- Test
Design and Development

Wireframe

About Screen

Resources Screen
Design and Development

Paper Prototype
Design and Development

Paper Prototype

The Samoan Vocabulary was created to assist beginner-intermediate students learning the Samoan language and is an easy to use mobile app created by Rai'a Ongesia. It was created in part of a usability study required to fulfill degree requirements at the Department of Learning Design and Technology at the University of Hawai'i at Manoa.
Design and Development

- Mobile Application Platform Search
- Designed for iOS devices
- Requirement Criteria
  - Free or low-cost
  - Platform with language learning building components.
- MIT App Inventor 2
  - http://appinventor.mit.edu/explore/
Design and Development

Working Prototype
Design and Development

Working Prototype
Design and Development

Original Prototype

Samoan Vocabulary App

Beginner
Intermediate
About
Resources

Beginner

Alphabet
Greetings
Time and Date
Your Family
Design and Development

Original Prototype
Design and Development

Original Prototype

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Attribution:

Online Samoan Dictionary
- Glosbe
- Freelang.net

Samoan Apps
- Samoan Language App
- Samoan Dictionary App
- Fa'aSamoa App
- Samoan Alphabet App
Usability Study

1. Develop Samoan Vocabulary App
2. Conduct first round of testing
3. Edit working prototype
4. Conduct second round of testing
5. Edit working prototype
Usability Study

- Consent Form
- Pre-Survey
- Usability Protocol
- Observation/Interview Guide
- Post-Survey

<table>
<thead>
<tr>
<th>Task #1</th>
<th>Navigate Samoan Vocabulary Application Homepage</th>
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<tbody>
<tr>
<td>Notes:</td>
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<tr>
<th>Task #2</th>
<th>Reviewing Beginner’s Lessons of Vocabulary</th>
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<td>Notes:</td>
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Pre-Survey

This presurvey is designed to gather background information regarding demographics, Samoan language background and technology use for the research purposes only, and will not be given or shared to outside entities. Complete this survey before participating in the usability study.

*Required

**Demographics**

- What is your gender? *
  - Male
  - Female

- Race/Ethnicity: *
  - African American/Black
  - Asian/Pacific Islander
  - Caucasian
  - Hispanic/Latino
Usability Study

Demographics

What is your gender?

- Female: 90%
- Male: 10%
Usability Study

Demographics

How old are you?

- Under 25: 90%
- 25-30: 10%
Usability Study

Demographics

How often do you hear the Samoan language spoken?

- Always: 60%
- Sometimes: 20%
- Often: 20%
Usability Study

Navigability

How easy was the app to navigate?

Participants

Very Hard

Round 2

Round 1

Very Easy
Usability Study

Ease of Use

The app is easy to use

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Round 1</th>
<th>Round 2</th>
</tr>
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<tbody>
<tr>
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</tbody>
</table>

Participants
Usability Study

Ease of Use

The app is user-friendly

- Strongly Disagree
- Strongly Agree

Participants

Round 2
Round 1

Strongly Disagree 2 3 4 Strongly Agree

1 2 3 4 5
Usability Study

Effectiveness of Mobile App

The information on the mobile application is useful

- Strongly Disagree
- Strongly Agree

![Bar chart showing participants' responses to the usefulness of information on the mobile application across two rounds.](chart.png)
Usability Study

Effectiveness of Mobile App

The app is effective in providing Samoan vocabularies

- Round 2
- Round 1

Strongly Disagree  2  3  4  5  6  7  8  9  10  Participants

Strongly Agree
Usability Study

How likely would you use this app?

- “I would definitely refer back to this app if I needed to refresh my memory on certain words and vocabulary.”
- “I would very likely use this app if I ever wanted to learn more or test my knowledge in the Samoan language.”
- “Only for samoan class.”
- “I would definitely download this app as it would be a good resource to have on mind.”
- “I would use if it were published.”
Round 1 Issues

- The red color for buttons was too bright
- Fonts are too small
- Add instructions for Lessons
- Shade the background for questions in the test
- Remove the title from the flag
- Change answer buttons in test to gray
Round 2 Issues

- Flashcards don’t look appealing
- Change the names for Test 1, Test 2, and Test 3
- Shade the buttons white for Resources
- Change the color for family picture in the beginner’s lessons
Changes to the App

Before

After
Changes to the App

Before

After

Search for words in the search bar.
Changes to the App

Before

After

Click on any lessons below to practice your knowledge using flashcards.
Changes to the App

Before

Test

Test 1
Test 2
Test 3

After

Test Suega

Multiple Choice Test 1
Multiple Choice Test 2
Multiple Choice Test 3
Changes to the App

Before

Test 1

Question 1
Which of the following words has the same meaning as "Aisa"?
Choose an answer

- Cool and Cold
- Ice and Snow
- Rain and Windy
- Sunny and Hot

After

Multiple Choice Test 1

Question 1:
Which of the following words has the same meaning as "Aisa"?
Choose an answer

- Cool and Cold
- Ice and Snow
- Rain and Windy
- Sunny and Hot
Changes to the App

Before

Resources

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Glosbe
Freelang.net

Samoan Apps
Samoan Language App
Samoan Dictionary App
Fa’aSamoan App
Samoan Alphabet App

After

Resources

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Glosbe
Freelang.net

Samoan Apps
Samoan Language App
Samoan Dictionary App
Fa’aSamoan App
What worked?

- Critical Friends
- Setting Timeline for project
- Samoan Apps, Textbook, an online sources.
- MIT App Inventor Components
- Participant Recruitment
Personal Reflection

What didn’t work?

- Limitations of screen
- Interface preview on laptop vs. the interface on an android device
- Copy and add components
- “Companion Connection Error”
Personal Reflection

Next time

- Start earlier
- Start recruitment early
- Time management
- Explore more app developer for iOS
- Recruit a team
Thank You!

LTEC Instructor
Dr. Fulford
My Critical Friends:
Ashley, T, and Kim
My Classmates
Questions?