Designing and Evaluating an Interactive Hawaiian Language e-Textbook

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BACKGROUND

- Hilo, Hawai‘i Island
- Curriculum Developer & Designer at the Hale Kuamoʻo Hawaiian Language Center at UH-Hilo
Printed Books vs. e-Books

☐ Word Search
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<th>PRINTED BOOKS vs. e-BOOKS</th>
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<td>✗ Word Search</td>
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PRINTED BOOKS VS. E-BOOKS

❌ Word Search

❑ Word Pronunciation
  • Appoggiatura
  • Ursprache
  • Onomatopoeia

✅ Search feature
Printed Books vs. e-Books

- Word Search
- Word Pronunciation
  - Appoggiatura
  - Ursprache
  - Onomatopoeia

- Search feature
- Audio playback
Printed Books vs. e-Books

- Word Search (X)
- Word Pronunciation (X)
  - Appoggiatura
  - Ursprache
  - Onomatopoeia

- Search feature (✓)
- Audio playback (✓)

Referenced Links
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## Printed Books vs. e-Books

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E-Books are Trending...Up!

- 3% of market in 2011
- 26% in 2015
- Portability
- Lower cost
- Multimedia & interactive features

Why This Project?

- Only available in print
- Limitations of a printed text
- Give Hawaiian language students a choice!
The purpose of this usability study was to develop and evaluate the first two chapters of an interactive Hawaiian language e-textbook for 1st year Hawaiian language students at UH-Hilo.

- Design
- Functionality

“The Hawaiian language shall live”
Navigating this e-Textbook

Aloha! Welcome to the digital edition of Nā Kāi ‘Ewalu. This e-textbook includes audio recordings, links to external websites, in-text navigational features, and downloadable ha‘awina worksheets.

Words that are underlined in blue are active hyperlinks that will either take you to an external website or will help you navigate within the text.

Audio recordings of each word and phrase in the Papa‘ōlelo and ‘Ōlelo Pōkole sections at the beginning of each chapter have also been included, and are marked with this symbol: 🎧. Click on the symbols within each chapter to hear the Hawaiian words read aloud. You can also listen to each word individually by clicking on the word. Should you choose this method, you will be taken to an external website to hear the word.

The Papa‘ōlelo and ‘Ōlelo Pōkole sections are available as digital flashcards in the Quizlet app. Click on the 📓 symbol found on the Papa‘ōlelo and ‘Ōlelo Pōkole pages to go directly to the Quizlet website.

The ha‘awina buttons 📧 within each chapter will take you to form-fillable worksheets in PDF format. In order to complete the form fields using your mobile device, you must have the Acrobat Reader mobile app installed.

If you have any questions regarding the use of this e-textbook, please contact Kaulana Dameg at kdameg@hawaii.edu.
Digital Resources for Hawaiian Language Learners

A collection of digital resources for Hawaiian language learners is shown below. Click on each logo to navigate directly to each website.

The Ka Haka ‘Ulou O Ke‘elikolani website contains information on the numerous programs and initiatives of the College.

Visit the website of the ‘Aha Pūnana Leo to learn more about its efforts in Hawaiian language revitalization.

The Uluau Hawaiian Digital Library website contains a wealth of information on the Hawaiian language and Hawaiian culture—including a searchable Hawaiian Dictionary database, a Hawaiian newspaper database, and numerous books, photos, and other learning materials.

The Kamakahi website is provided by the Kamakahi Schools, and contains a variety of multi-media resources on the Hawaiian language and Hawaiian culture.

Developed by the Office of Hawaiian Affairs (OHA), the Papakilo Database is an online repository of a large collection of materials on Hawaiian culture, language, and history.

Audio recordings of native Hawaiian language speakers can be found on the Hawaii Voyager website of the University of Hawaii System by searching for the term “Manaleo” in the Videorecording/DVD collection.

The Clinton Kamana‘ole Collection is found on the Joseph F. Smith Library and BYU-Hawaii’s website, and contains audio recordings and transcriptions of interviews of native Hawaiian language speakers.
Pahuhou 1
Nā Huapalapa o ka Piʻapā ʻOliwi

You will need to be able to spell words orally in Hawaiian. All but a very small fraction of Hawaiian words are spelled with a set of ten vowel symbols and eight consonant symbols. Words in the *pahihele* at the beginning of all *mokuna* (chapters) are listed in Hawaiian alphabetical order. Hawaiian alphabetical order is shown below with the eighteen symbols. In parentheses after each symbol is its name.

- a (ai), e (ei), i (ii), o (oi), u (ui), e (e‘e), i (i‘i), o (ō), u (ū), ‘ (koko)

An example of a name spelled out loud in Hawaiian is given below:

KAʻAI MA
kāʻai o i‘i kēkē iō iō iō iō iō

Hāʻawina 1.1.1

We will spell the following names in Hawaiian as done in the example above, writing the name of each separated by a hyphen.

1. Alii
2. Nihoohana
3. Keʻoki
4. Pālolo
5. Omano
6. Nānāole
7. Uli

Hāʻawina 1.1.2

Arrange the names in Hāʻawina 1.1.1 in Hawaiian alphabetical order.

1. Alii
2. Nihoohana
3. Keʻoki
4. Pālolo
5. Omano
6. Nānāole
7. Uli

1. manini  
a type of fish
2. manini  
the name of a street on Oʻahu
3. puna  
name used in Keʻalaʻaʻeloa's family in reference to his grandmother on his father's side
4. puna  
a type of eating instrument, a spoon
5. puna  
a specific district on the island of Hawaiʻi
6. māmā  
mom, a type of family relationship
7. māmā  
named used in our family in reference to our mother
8. lehua  
John Takamoto's sister
9. pāhoehoe  
a type of lava rock
10. pōhaku  
a nickname for Keooli Stone
E-Book Design

Kunihi Ka Mauna I Ka La‘i E

Nā Kai ‘Ewalu Mokuna 1: Papa‘olelo

Quizlet

STUDY
Flashcards
Learn
Speller
Test
PLAY
Scatter
Space Race

Ka Pāpā‘olelo o Ka Mokuna 1

- he (ka‘i)
- ka/kae (ka‘i)
- keia (ka‘i)
- a
- the
- this
8 participants, current 1st year students

Ages of Participants

- 18-24: 2
- 35-44: 1
- 45-54: 2
- 55+: 3
8 participants, current 1st year students

Ages of Participants

- 18-24: 3
- 45-54: 2
- 55+: 1

Hawaiian Language Coursework

- < 1 year: 4
- 1-2 years: 2
- 2-3 years: 2
Device Preference

Reading in General

50% Printed Books
50% e-Books
**Device Preference**

**Academic Reading**

- **38%** Printed Books
- **63%** e-Books

**e-Books**
- Easy to use
- Easy to carry (light weight)
- Easy note taking
- More convenient
- Cheaper than paper version

**Printed**
- Can write all over them
- Physically hold book & flip through pages
- Easy to share
- Easy to carry
USABILITY PROTOCOL

6 different tasks & scenarios

- Navigate within chapter
- Listen to pronunciation of words
- Download and complete a lesson worksheet
- Navigate from chapter to chapter
- Use search feature to find a specific word
- Give general feedback
USABILITY PROTOCOL

6 different tasks & scenarios
0 – 3 scale of frustration
Navigating the Book

- “Easy to navigate from chapter to chapter”
- “Liked the hyperlinks”
VISUAL APPEAL

- “Looks like paper version”
- “Format of the text and the design”
GENERAL FEEDBACK

**Liked Most**
- Audio Recordings
- Hyperlinks
- Worksheets

** Liked Least**
- External websites
- Left–right scrolling
- Apple platform
- Navigating
Which Version?

- Neat features in the e-book
- Easy to use, can print notes
- Less books in backpack
- Interactive features
- Love the audio
- More convenient and user friendly
- Rather not carry around iPad
Suggestions for Improvement

- More audio recordings!
- More visual icons
- More navigational aids
- Mini games and activities
- Resource links throughout book
- Instructions for using programs like iBooks and Acrobat
**TOP 5 RECOMMENDATIONS**

5. Simple, clutter free design
4. Minimize app switching
3. Multiple devices
2. Cross-platform
1. Lots of audio!
WHAT’S NEXT?

- Complete e-Textbook
  - Two volumes
  - 27 chapters
Mahalo nui!

Critical Friends James G. & Kainoa B.
‘Ohana LTEC, Professors & Cohort
Kumu & Haumāna at Ka Haka ‘Ula O Keʻelikōlani
College of Hawaiian Language
Hale Kuamoʻo Hawaiian Language Center
‘Ohana and Friends