



Easy as ABC: using LARA to build multimedia alphabet books

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Abstract. We present a study in which multimedia alphabet books were constructed for ten languages using the Learning And Reading Assistant (LARA) platform. We describe the alphabet books we built, the different design features they instantiate, and an initial evaluation using an anonymous online questionnaire. Links are provided to the books themselves, which are freely available on the web.

Keywords: CALL, multimodality, reading, alphabets, sign language, open source.

1. Introduction

In order to get an initial foothold in a new language, the learner needs a basic understanding of three things: the sounds, the writing system, and the vocabulary. Although these may seem like trivial requirements, experience shows that they often pose serious and even insuperable obstacles. Computer Assisted Language Learning (CALL) methods that can address these issues are potentially very useful.

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Suitably reconfigured for the internet age, we think there is much to recommend the humble alphabet book: alphabet books look simple and unthreatening, but can impart sophisticated linguistic information without scaring naïve users. A quick search of the web finds many online alphabet books. There is, however, little systematic discussion of how they should be structured, perhaps because of an enduring prejudice that they are too trivial to be taken seriously.

In this paper, we describe recent work carried out within the framework of LARA (Bédi et al., 2020, <https://www.unige.ch/callector/lara/>), an open source tool for creating multimedia texts, where we have used the LARA framework to create examples of multimodal online alphabet books for ten languages. The work has been carried out by several groups within the loosely-knit LARA consortium, using a variety of techniques. These include presentation of phoneme inventories through phonetic concordances or contrastive pairs; inclusion of pictures where touching a part of the picture plays audio; phonetically annotated words, where the student can spell out the word in audio form by clicking through it; and linking to online videos.

2. Ten LARA alphabet books

Table 1. Features of the alphabet books used in the study, with links to books

Language and link	Audio	Images	Clickable images	Video	Example sentences	Phonetic text	Contrasting pairs	Letter variants	Grammar
Arabic	✓	✓				✓		✓	
English	✓	✓	✓		✓	✓			✓
Farsi	✓	✓				✓		✓	
French	✓	✓	✓		✓	✓			✓
Hebrew	✓	✓		✓		✓		✓	
Icelandic	✓	✓							✓
Icelandic Sign language		✓	✓	✓					
Irish	✓	✓			✓		✓		✓
Slovak	✓	✓	✓						
Ukrainian	✓								

We built multimedia LARA alphabet books for Arabic, English, Farsi, French, Hebrew, Icelandic, Icelandic Sign Language, Irish, Slovak, and Ukrainian. There was, intentionally, no overall coordination; people were asked to develop alphabet books as they saw fit. In practice, people watched each other, and the later books often adapted features from the earlier ones. [Table 1](#) summarises each alphabet book in terms of the following strategies.

Audio. Clicking on a word plays audio. This was used in all languages except, for obvious reasons, Icelandic Sign Language.

Images. There are pictures of objects illustrating letters. This was used for all languages except Ukrainian, a nonstandard alphabet book essentially designed as a minimalist poem making a political statement.

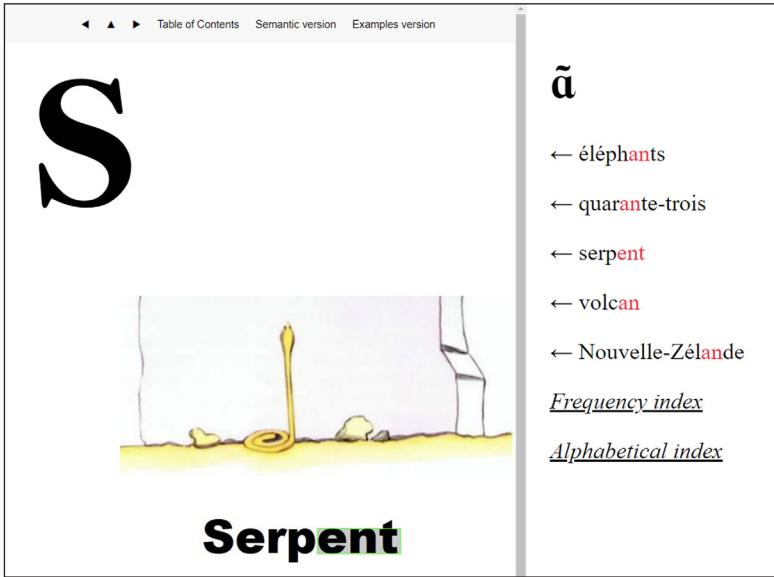
Clickable images. The LARA platform supports the definition of images in specified areas, defined using a graphical drawing tool, which are associated with words ([Bédi et al., 2022](#)); hovering highlights the area, and clicking plays audio for the word or shows other information. This feature was used in different ways. In English and French, which were built around images taken from Saint-Exupéry's *Le petit prince*, the point was to define the relevant part of the image. In Icelandic Sign Language, it was used to convert a poster illustrating handshapes (handshapes are the sign language equivalent of phonemes) into multimedia LARA form. In the Slovak book, which was designed for small children, it provided the basis for a game where each image hid the shape of the letter it illustrated.

Video. Video was used in Icelandic Sign Language to show sign language clips, and for entertainment value in Hebrew.

Examples. Four books included example sentences for letters and words.

Phonetic text. Another feature recently included in the LARA platform is 'phonetic texts' ([Bédi et al., 2022](#)), where words are automatically divided into letter groups associated with phonetic values. The user clicks on letter groups rather than words. Clicking plays audio and also shows a phonetic concordance containing other examples where the same phonetic value has occurred. This feature was used for Arabic, English, Farsi, French, and Hebrew. For English and French, the motivation was to help learners understand the notoriously opaque correspondences between letters and sounds in these two languages. For Arabic, Farsi, and Hebrew, the point was to help learners link together the often quite different variant forms of letters. [Figure 1](#) presents an illustrative screenshot from the French book.

Figure 1. Example of phonetic LARA text (French book): hovering over the letters 'ent' on the left highlights them, showing that they are a single phonetic unit; clicking shows a list of examples on the right



Contrasting pairs. Letters can be presented together with closely related ones. This was used for Irish, where one of the key issues is the palatalisation/velarisation contrast (Bédi et al., 2022).

Letter variants. As noted above, Arabic and Hebrew contain variant forms of letters, the form used depending on the position the letter takes in the word.

Grammar information. For English, French, Icelandic, and Irish, clicking on a word accesses grammatical information. For all four, the base form of the word is shown on the right-hand side. For Icelandic, the learner can also see a table of inflected forms linked from an online resource.

3. Preliminary evaluation with questionnaire

We posted a page¹² with links to the ten alphabet books and a link to an anonymous online questionnaire with 11 questions, and circulated it to friends, colleagues, and

12. https://www.issco.unige.ch/en/research/projects/callector/alphabet_books.html

social media, asking them to try at least one book and then answer the questionnaire. We received responses from 41 subjects (30 F, nine M, two O). Of these, 24 said they were evaluating the books from the point of view of a learner, 11 from that of a teacher, and six from both, while 23 subjects identified as language teachers, mostly (20) of English.

The distribution of alphabet books reviewed was uneven, with 22 subjects reviewing English, 17 Slovak, 9 Icelandic, six Arabic and French, five Ukrainian, four Icelandic Sign Language, two Irish, and one Hebrew (16 subjects reviewed more than one book). Fortunately, English was one of the most interesting books in terms of including many features. On the satisfaction question (“In general, what was your reaction to the alphabet book you tried”), 25 responses (61%) were positive, with three choosing “Excellent. I will come back and use it again” and 24 “Interesting, I spent some time looking at it”; nine (23%) were weakly positive (“Kind of fun, I flipped through it a bit”). The remaining 16% were negative.

On the multiple choice question “Which features do you think should be included in an online alphabet book for beginner learners”, the most popular answer (33; 81%) was “audio recordings of words”. Other common answers were “Examples of words in a sentence” (23; 56%), “Written word for each letter”, and “Examples showing different forms of letters” (both 22; 54%), “Written phonetic transcripts of words” (20; 49%), “Written phonetic transcripts of letters” (18; 44%), “A button allowing learners to record their own voice” (16; 39%), and “Links to grammar information” (15; 37%).

In response to the question “Based on the examples you have reviewed, would you be interested in using the LARA platform to construct your own alphabet book”, 15 (37%) answered “Yes”, with most of the rest (21; 51%) answering “Don’t know/haven’t thought about it”.

4. Conclusions and further directions

Given the fairly small sample size, our conclusions can only be tentative. Our impression is that both learners and teachers viewed the online alphabet books quite positively. Unsurprisingly, the most useful feature was perceived as being the ability to listen to audio, which is standard. It was also unsurprising to see that the majority of the subjects approved of other standard features like words exemplifying letters, images for the words, and example sentences.

Less obviously, we were interested to find that about half the subjects appeared to like the novel ‘phonetic text’ functionality, which was used in the Arabic, English, Farsi, French, and Hebrew books. More detailed investigation of user reactions to this feature would be a natural way to continue the study.

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