LINGUISTICS DEPARTMENT - STANFORD UNIVERSITY

An Invitation to CALL

Foundations of Computer-Assisted Language Learning

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Unit 4: CALL and Language Skills

OVERVIEW

Skills-oriented language teaching remains a common approach for classes as well as for self-learning, and computer-assisted language learning is no exception. In this unit, we look at how both tool and tutor software can be used to support specific skills. In particular, we will look at some websites that focus on these skill areas. Many of these are for free, but like everything else that's free on the web, the sites need to be looked at carefully for their pedagogical value. Once you understand what they do, try to judge their fit to your potential students and your own teaching approach. You can also use them to get ideas for your own future CALL materials development. The questions you should be trying to answer are the following:

1. What have teachers/developers done to teach the skill areas using computers?
2. To what extent does what they've done actually enhance learning?
3. And most important, how can you use these resources to support your students' learning objectives?

In the 20th Anniversary Issue of *Language Learning & Technology* (June, 2016), Robert Blake provides a valuable review of some key developments in the four skills for CALL, framing it under the umbrella of task-based language teaching. He notes that isolating each of the four-skills (listening, speaking, reading, and writing) in practice is no longer as relevant as it was historically, given contemporary views of integrated language development and multi-modal expression. However, the content and commentary that the article provides remain valuable for curricula incorporating technology, regardless of whether they isolate or integrate those skills: http://www.lltjournal.org/item/2951.

ESL COLLECTIONS AND PORTALS

Because of the enormous number of English teachers and learners, there are quite a few multi-skill collections for ESL. A few, such as www.manythings.org by the Kelly brothers (http://aitech.ac.jp/~lkelly/ and http://aitech.ac.jp/~ckelly/) are mostly labors of love for students and colleagues around the world; often, however, these are commercial, aimed at getting "eyeballs" for advertisers. Some of these are divided by skills and have examples of web-based materials: see for example www.eslgold.com or just type "ESL" plus the skill you're interested in into Google. Collections for other commonly taught languages can be found in a similar way. Some have links to external websites (commonly called portals), some have only their own material, and some have both, such as www.rong-chang.com.

LISTENING

Listening is potentially one of the most promising areas for CALL development. This is because multimedia computing has everything standard audio and video have with the addition of a variety of meaning technologies such as text support, hyperlinked glossaries, and even translations. Listening activities typically involve presentations followed by comprehension questions--some also include full or partial dictations. One type of presentation specific to CALL is the *punctuated* presentation, in which the flow is interrupted at intervals to ask questions along the way. This in theory encourages more focused attention and allows a learner to get a check on understanding early in the activity. This technique was popularized in products by DynEd beginning around 1990. Surprisingly few multimedia programs have followed their example.

An example of a course website for one of my recent listening classes is at www.stanford.edu/~efs/693b/. The notes have both links and examples of listening assignments. Good sites for authentic videos are www.ted.com, http://ecorner.stanford.edu, and www.cnn.com/cnn10. Authentic podcasts for listening can be found at https://www.scientificamerican.com/podcast/60-second-science/ among other sites. There are also a number of useful dedicated ESL listening sites: three well-established ones are www.esl-lab.com, www.elllo.org, and www.englishbaby.com.

SPEAKING

In terms of *direct* practice of speaking, recent developments on the web have allowed for voice chat sites which make it possible for learners and teachers to interact through the Internet in distance education courses. Asynchronous speaking practice is possible through audio discussion applications like https://voicethread.com/ or by simply attaching sound files to email. Using the video message feature of Skype, WhatsApp, or Facebook Messenger serves the same purpose. There has also been interest in having students produce and publish audio or video podcasts. For synchronous speaking practice, there are sites for tandem learning such as www.mylanguageexchange.com, which can connect language exchange partners through Skype. A list of a number of other language exchange sites can be found at https://www.thebalance.com/free-language-exchange-websites-1357059. Duolingo also has an option for users to find speaking partners. Technology devices can be a catalyst as well as the

tool for speaking: having students share a device in groups of two or more can get them talking about the computer task and improve speaking fluency, although research has not always borne this out: like many other CALL activities, it depends on the students' readiness and motivation. For tutorial CALL, practicing speaking has always been tricky because the computer cannot really respond intelligently to the speaker's input, although "intelligent" assistants like Siri, Alexa, and Google may be of some value in speaking practice if a learner's accent is transparent to their speech recognition systems. A program I helped author that used speech recognition and branching dialogues for speaking and listening practice was *TRACITalk: The Mystery* (CPI, 1997), an example of a participatory drama: see https://learning2gether.net/tag/traci-talk/ for a discussion.

Perhaps the most widely used indirect method for supporting speaking is simply to listen to conversational dialogues on disk or the web or through apps, using the dialogues as models for interactions in common situations. It has also been suggested by practitioners as well as researchers (e.g., Payne & Whitney, 2002) that using text-based chat supports the development of speaking skills indirectly due to the synchronous and informal nature of chat. Another potential, but relatively undeveloped area is the use of "chatbots" that incorporate keyword analysis to provide a simulated interaction: see http://www.rong-chang.com/tutor_mike.htm for an example.

READING

In the early days of CALL, reading software was designed to improve skills in order to transfer them to paper materials. More recently, reading in digital form is becoming more and more common. Given the increasing popularity of electronic readers such as Amazon's Kindle (www.amazon.com), with its ability, for example, to link to an electronic dictionary, the tools used for reading are likely to become richer supports for language learning.

Most CALL reading instruction, first on disk and later on the web, has involved the use of meaning technologies. These include dedicated applications, such as hypertext glossaries, translations, and notes (on grammar, usage, culture), put together by developers for particular texts and generic applications such as electronic dictionaries, encyclopedias, translation systems like Google's http://translate.google.com/#. A number of studies have shown an advantage for comprehension and vocabulary acquisition when reading materials are supported by multimedia glossaries, and both native speaker and language learner texts exist with voice enhancement (text to speech) texts and dynamically illustrated material.

Here are some other ways CALL can be used to support reading

- Just using the web: teachers give students tasks that require finding, comprehending and sometimes consolidating information on the web.
- Educational sites with ESL or adult literacy support: See the Learning Resources Adult Education Reading Site, http://literacynet.org/learningresources/.
- Text reconstruction activities, such as Storyboard, cloze exercises, and jigsaw readings.
- Timed or paced readings to develop speed, for example, http://college.cengage.com/collegesurvival/watkins/learning_companion/1e/students/time

d_reading.html. (note: the comprehension questions appear to no longer be available--try summarizing instead).
- Multimedia reading, such as voice enhanced texts and dynamically illustrated material, found especially on CD-ROMs and websites.
- Online graded readers: https://erfoundation.org/wordpress/graded-readers/

WRITING

Writing was revolutionized for everyone with word processing, and the addition of spell checkers has been quite helpful. Grammar and style checkers are much less useful to date, and using a thesaurus can be counterproductive if students aren't trained in their limitations. Writing has also been a common skill taught as a course through distance education using the Internet.

Some other ways computers enhance writing instruction include the following.

- Use of email and discussion boards (see Unit 3) for fluency development.
- Online writing resources such ashttps://owl.purdue.edu/owl/english_as_a_second_language/esl_students/index.html and tutorials, like www.monash.edu.au/lls/llonline/writing/index.xml
- Blank screen (where the monitor is turned off and students type in their ideas without being distracted) and other production techniques, such as using graphic organizers or concept mapping.
- Collaborative writing tasks. These are made easier today with tools such as an online word processor available for free from Google: http://docs.google.com/. Here are a couple of resources for learning more about Google Docs: http://journal.jaltcall.org/articles/6_1_Firth.pdf; http://www.tesl-ej.org/wordpress/issues/volume14/ej55/ej55m1/
- Writing support practice (e.g., CALL activities with fill-ins for structured writing)
- Publication opportunities (both paper and web) as motivators. See Tom Robb's classic description of an early web publishing project at www.cc.kyoto-su.ac.jp/~trobb/projects.html.

With respect to the last point, writing publication opportunities are readily available through Wikis and Blogs. Wikis are webpages that can be easily modified by multiple users (see, for example, Wikipedia: www.wikpedia.org) and are particularly good for collaborative projects: see http://callej.org/journal/13-1/Li_2012.pdf. Blogs (weblogs) are online journals that individual students or groups can publish and allow others to leave comments on: see https://www.edutopia.org/blog/blogging-for-english-language-learners-rusul-alrubail.

GRAMMAR

Grammar practice was perhaps the earliest use of CALL. Today grammar work is largely focused on the following:

- Workbook-style exercises (on disk and online): online examples can be seen at www.grammar-quizzes.com/.

- Grammar test prep materials (especially TOEFL www.toefl.com and TOEIC http://www.toeic.com)
- CD-ROMs accompanying grammar textbooks, like Betty Azar's grammar series http://www.azargrammar.com/multimedia.html
- Hypertext-linked grammar notes accompanying readings
- Grammar portals such as www.esltower.com/

PRONUNCIATION

Pronunciation work is generally of three types.

- Listen, repeat/record, and compare. This option shows up in many multimedia programs and is analogous to the tape-based language lab technique in the audio-lingual method. However, the instantaneous response of digitized speech (no rewinding needed) makes the computer a more effective instrument for this.
- Visualization: wave form, pitch contour, spectrogram. The first and last are of questionable value. Wave forms are easy for a computer to produce, but they only clearly show the bands of intensity across time. This is most helpful in teaching rhythm. Spectrograms are most useful if they have high detail, which they generally don't on CALL software, and they require training in phonetics to interpret them. However, visualization of pitch contour has been found to be quite helpful for some students in recognizing and producing both the patterns and ranges of intonation. An open-source program called Praat can be used to provide visualizations. See https://pdfs.semanticscholar.org/c4a8/c157bb0b88ae67d8add828f187761bc43cbc.pdf.
- ASR (automatic speech recognition) scoring. Here, the computer uses speech recognition software to grade accuracy. This can be useful, but there are a lot of technical problems--microphone quality, sound card quality, and background noise are all variables that can negatively affect the score, leading even native speakers to score as non-natives. For an example of a standardized test that uses ASR, see Pearson's Versant (formerly Ordinate's PhonePass: https://www.pearson.com/english/versant.html. ASR and visualizations are also used in commercial products such as Rosetta Stone, http://www.rosettastone.com. Students can get practice and feedback on their speech through ASR at www.englishcentral.com by repeating lines from online videos. A relatively sophisticated and comprehensive ASR-based system is Carnegie Speech's Native Accent, http://www.carnegiespeech.com/products/nativeaccent.php, which offers individualized practice on both segmental and suprasegmental components (as well as grammar) based on an intelligent tutoring system. At present it is only available through institutional licensing.

It should be noted, however, that ASR scoring is often not the same as a native speaker or pronunciation teacher would give: sometimes a native speaker will even be marked low. Also problems with the quality of the microphone, environmental noise, electronic or mechanical noise from the computer, and input settings for the microphone can all affect the accuracy of speech recognition, and certain sounds are more accurately recognized than others.

There are a number of commercial CD-ROMs for teaching pronunciation, though increasingly these appear as web-based downloads or apps. These are generally superior to the text and tape alternatives because of the ease of recording and repetition, as well as forms of feedback. There are also some commercial and teacher-produced sites with pronunciation instruction. Among the more comprehensive is Rachel's English: http://www.rachelsenglish.com/.

VOCABULARY

Vocabulary activities have been around since the early days of CALL in the form of electronic flashcards (linking L2 word to L1 translation or L2 word to L2 definition). Other common CALL implementations for vocabulary include the following.

- Hypertext dictionaries/glossaries. WordWeb is a free memory-resident dictionary system that runs in the background on your computer.
- Digital dictionaries: Longman, Oxford, and Cambridge have learner's dictionaries that include pronunciation and sometimes other multimedia support. An online version is at www.ldoceonline.com.
- Concordance programs: these programs look for words in collections of texts, or corpora, and return examples of the word in the immediate context it occurs in: an online one is available at http://lextutor.ca/conc/eng/.
- Picture dictionaries: http://visual.merriam-webster.com/ has a picture dictionary for English. Of course the largest "picture dictionary" in the world is at http://images.google.com. Try alizarin and pangolin if you don't know what they mean (or even if you do). It also works for other languages.
- Word lists and vocabulary tests for English: Classic General service list, http://jbauman.com/gsl.html; New General Service List, http://www.newgeneralservicelist.org/; Academic word list, http://www.victoria.ac.nz/lals/resources/academicwordlist/default.aspx; https://www.lextutor.ca/tests/levels/productive/.

An outstanding site for vocabulary teaching and research tools is Tom Cobb's Compleat Lexical Tutor: http://www.lextutor.ca/.

CULTURE

Obviously, this is a huge area for foreign language teaching, where authentic cultural material is readily accessible through the web. There are many ways to use the authentic material found on websites to support cultural learning. YouTube, http://www.youtube.com, is a particularly useful application for this purpose with intermediate and advanced students, see http://eduwithtechn.wordpress.com/2007/08/18/teach-culture-through-youtube-your-students-do-it/. Links specifically for teaching culture can be found at http://iteslj.org/links/ESL/Culture. To review a proposed pedagogical framework for culture and technologies, see Levy (2007) at http://www.lltjournal.org/item/2576. MIT hosts a website for the Cultura Project, supporting development of cultural understanding and connecting students from different cultures to one another https://cultura.mit.edu/.

PRACTICE ACTIVITY

Select *one* skill area that particularly interests you. After reviewing some of the sources mentioned above, find several *other* web sources on your own and review them for their potential to integrate into or supplement your class activities.

REFERENCES

Payne, J. S., & Whitney, P. J. (2002). Developing L2 oral proficiency through synchronous CMC: Output, working memory, and interlanguage development. *CALICO Journal* 20.1.

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