LINGUISTICS DEPARTMENT - STANFORD UNIVERSITY

An Invitation to CALL

Foundations of Computer-Assisted Language Learning

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Unit 8: Conclusion - Other Established and Emerging Areas of CALL

In the past seven units you have been introduced to a wide variety of applications of the computer for language teaching. In Unit 1, we talked about the history of CALL, the tutor-tool distinction, and the various roles you can play as a participant in the CALL field. Unit 2 looked at tutorial software, focusing on evaluation but also discussing issues of development and implementation. Unit 3 gave an overview of the different ways computers on a local network or the Internet can be used for communicative activities. In Unit 4, we linked computer uses in the four skills of reading, writing, listening, and speaking, as well as grammar, pronunciation, vocabulary, and culture, through descriptions of applications and issues in each of those areas. Unit 5 explored CALL environments, materials, and activities. Unit 6 touched on CALL theory and research, and Unit 7 introduced teacher education, professional development, and learner training for CALL.

Although it has attempted to be comprehensive, the course has admittedly offered a somewhat skewed impression of the current state of the field. In the past few years, there has been a much stronger interest in CMC, mobile learning, and game-based language learning. Tutorial CALL still has importance from the learner's perspective, especially for listening, as the popularity of sites such as English, Baby! (www.englishbaby.com), Randall's Cyber Listening Lab (http://www.esl-lab.com), and the English Listening Lesson Library Online (http://www.elllo.org/) attest. However, a lot of tutorial material has moved to apps, like Duolingo (http://www.duolingo.com). Recall that this is a course in *foundations* of CALL--technology changes from year to year (or even month to month).

And despite that aim of being comprehensive, there are a number of areas related to CALL that we either did not cover at all or just mentioned in passing. I would like to mention a few of them here and provide some direction for future self-study.

Concordancing & corpora. Concordance programs are tools that allow you to tap into large collections of texts, called corpora, to help learners discover how language is actually used. There are also web-based concordancers available: see http://www.lextutor.ca/conc/eng/ for example. If you put in a word or phrase, for instance, these programs will search for examples of that item in context and return a listing. Although originally designed for research purposes, language teachers have adopted it as a tool for language learners. See Liu & Lei (2017) (http://sites.tesol.org/Bookstore/ItemDetail?iProductCode=14040) for more information. Using concordancers is connected to the more general area of data-driven language learning: a number of other useful tools in this area can be found at Tom Cobb's Lextutor site, http://www.lextutor.ca/. Some background on this area of the field can be found in Chambers (2005), http://www.lltjournal.org/item/2509. See Liu & Lei (2017) (http://sites.tesol.org/Bookstore/ItemDetail?iProductCode=14040) for more information on current implementations. A tool for a kind of video concordancing is https://youglish.com/. Although designed to provide examples of pronunciation, it also gives examples of words as used in context on Youtube videos.

Learning Management Systems. Learning management systems, or LMSs (sometimes also called course management systems), include commercial systems like Blackboard and WebCT that are used either for online courses or for online elements of classroom-based courses. As the label suggests, they are used by instructors and institutions to organize course materials and assignments and maintain records of student learning activities. They have features such as discussion boards, synchronous chat and web-based testing that make them appealing for language teaching. Here at Stanford University, we use Canvas: https://www.instructure.com/canvas/, through an institutional agreement with Instructure. A free, open-source LMS popular with language teachers is Moodle: www.moodle.org. These are becoming increasingly popular for managing courses on campus and are particularly valuable for online teaching. Robb (2004) provides an introduction to Moodle for language teaching: http://tesl-ej.org/ej30/m2.html. A related concept is that of content management systems (CMS) such as Drupal: http://drupal.org. Importantly, LMSs used in CALL environments should have features like the ability to upload student and teacher produced audio and video files.

Computer-Based Language Assessment. Goal 3, Standard 1 of the TESOL Technology Standards for Teachers acknowledges the importance of teacher awareness and implementation of relevant technology resources to aid assessment. Although testing is not a direct part of language *learning*, it is clearly an area of importance to language teachers. For proficiency testing, TOEFL (www.toefl.org) and other commercial proficiency tests are now offered primarily through computer at testing centers. Ordinate Corporation's PhonePass (now Pearson Corporation's Versant) is a telephone-based oral proficiency test that is entirely machine-scored using an innovative speech recognition system. Some commercial language schools and publishers now use online testing for placement and diagnostic purposes. Online testing and quizzing is also offered through LMSs or dedicated testing programs. The May 2001 issue of Language Learning & Technology (http://www.lltjournal.org/collection/col_10125_35881) was

devoted to computer-based language testing and provides a good historical backdrop to current initiatives. Chapelle & Douglas (2006) provides an excellent overview of this area of CALL up to that time: Chapelle, C & Douglas, D. (2006). *Assessing Language through Computer Technology*. Cambridge: Cambridge University Press (see the review at http://www.tesl-ej.org/wordpress/past-issues/volume10/ej40/ej40r7/). One area that has been particularly fruitful is automated writing evaluation (AWE). Iowa State University had a research group a few years ago that was devoted to exploring the value of a particular system (ETS's Criterion) in ESL writing classrooms (see http://volkerh.public.iastate.edu/awe/presentations.html). See also the special issue of *CALICO Journal* on the topic: https://journals.equinoxpub.com/index.php/CALICO/issue/view/2074. A newer useful review article on technology and language assessment (2016) was published in the *Language Learning & Technology* 20th Anniversary Issue: http://www.lltjournal.org/item/2950.

Tracking. Tracking of student use of computer applications has been a part of CALL research since the beginning, but a lot of research, both formal and informal, has relied on other data such as pre- and post-testing, observation, think-aloud and recall protocols, and simply student attitude surveys to determine effectiveness. Tracking routines for tutorial software automatically record student use of software, and for CMC, you can keep logs of chat sessions or review emails or submissions to discussion boards. Tracking is important not only in research, but also in teacher diagnosis of student problems (with the language *or* the software) and in adaptive testing or intelligent tutoring. As computers become more powerful and LMSs more sophisticated, we can expect more advances in tracking. For research in particular, though, this opens up questions of privacy that must be reviewed by human subject committees.

Developing autonomy. A key development in recent years has been the recognition that students using technology outside the classroom or language lab are necessarily more autonomous than those who learn in more traditional settings. A special issue of *Language Learning & Technology* on autonomy can be found here: http://www.lltjournal.org/collection/col_10125_35919, providing evidence of the opportunities and as well as the challenges in helping language learners develop autonomy. An excellent review article on the topic (2016) was published in the *Language Learning & Technology* 20th Anniversary Issue: http://www.lltjournal.org/item/2952. This is an area we can expect to see grow in the near future, and it is closely linked to increased and more effective learner training (Unit 7) and to the notion of incidental language learning. See, for example, the discussion of the "digital wilds" below.

Online, Hybrid/blended learning, and Flipped Classrooms. The past two decades have seen increasing developments in fully online language learning, as well as other options that give rise to moving parts of a language course out of the classroom and online. As noted previously, online language teaching can be accomplished asynchronously or synchronously, and can involve either individual tutoring or groups of learners. A popular asynchronous option (though with mixed results) has been the LMOOC--a massive online open course for language: see https://www.lltjournal.org/item/2863 and https://en.wikipedia.org/wiki/Language_MOOC. Hybrid or blended course typically involve some combination of learning in the classroom and online (or in the past, computer lab--see https://journals.equinoxpub.com/index.php/CALICO/article/view/23302). One form of this is the

flipped classroom, where content and lectures are provided online, often through teacher-produced videos, including narrated PowerPoint presentations, and students are expected to view these prior to class. Class time is then spent in discussion and activities based on this already familiar material rather than traditional "teaching", where the material is introduced in class and then activities and tasks often take place as homework. For an overview, see http://www.tesl-ej.org/wordpress/issues/volume19/ej74/ej74int/.

Dynamic Areas from Daily Life: Web 2.0 and Social Networks, Mobile Learning, Virtual Worlds, and Gaming. These are areas that have already transformed a lot of teacher implementation of CALL. Web 2.0 refers to the democratization of the web through blogs, wikis (such as Wikipedia), photo and video sharing sites like Youtube, social media spaces like Facebook, and customer reviews on sites like Amazon and Yelp, and numerous other applications. These allow students access to authentic language (sometimes "authentic" within the specific genre though) and opportunities to collaborate and publish--critically--for an authentic audience, so that they are more fully expressing themselves and developing their second language identities through tasks and activities than in the typical face-to-face classroom with the teacher as primary audience. A discussion of Web 2.0 and the concept of "tagging" can be found at http://www.lltjournal.org/item/2542. See also Nik Peachey's introduction to Web 2.0 at http://www.youtube.com/watch?v=NfpkVYXpvyE. A CALICO Journal article by Blattner & Fiori (2011) shows how group interactions on social networking sites can be exploited to help students learn pragmatic features: https://journals.equinoxpub.com/index.php/CALICO/article/view/22965/18971.

Mobile assisted language learning (MALL) as the name suggests refers to learning that takes place through mobile devices like mp3 players, mobile phones, pocket PCs and so on. Although there have been clear limitations to the quantity and quality of information that can be accessed and exchanged, the ubiquity of some of these devices and student familiarity with them makes this an important area for continuing development (even I have jumped on the bandwagon, co-authoring a couple of pronunciation apps for the iPhone/iPod/iPad: see https://web.archive.org/web/20160430211902/http://www.pronunciationtutor.me/). A good introduction to this area by Chinnery (2006) can be found at https://www.lltjournal.org/item/2527. Within this general area, the rapid spread of tablet computers like the Apple iPad and Android-driven devices form other manufacturers is likely to shake up the education world in general in the next few years. TIRF (The International Research Foundation) has commissioned a set of articles focused on mobile learning in the workplace (see http://www.tirfonline.org/english-in-the-workforce/mobile-assisted-language-learning/), including one Glenn Stockwell and I co-authored, where we offer a set of 10 principles for mobile learning, including limiting multi-tasking and environmental distractions, acknowledging and respecting learners' existing cultures-of-use, and providing learner training as needed. An important issue of *Language Learning & Technology* also focuses on MALL: http://www.lltjournal.org/collection/col_10125_35924.

Virtual worlds are 3-dimensional online environments where students in the form of projected avatars interact with one another and native speakers as well as with "physical" objects and spaces within the world. They are in some ways the descendants of MOOs discussed in Unit 3. A number of groups have experimented with language learning in Second Life

(www.secondlife.com). To date, the promise of virtual environment remains unfulfilled due to both technical issues and to difficulties with getting students to focus on tasks rather than the other affordances of the environment. For an early overview see Vance Stevens' article at http://tesl-ej.org/ej39/int.html. Here's a short piece looking at both virtual reality (VR) and augmented reality, an overlay on a real scene that has promising applications for MALL: https://medium.com/@denishurley/the-future-of-language-learning-augmented-reality-vs-virtual-reality-679d6668db5b. CALICO's Virtual Worlds SIGis also continuing to develop this CALL sub-field: https://sites.google.com/view/calico-vw-sig/home.

We have been using games for language learning in one form or another almost since the beginning of CALL, but interest in online games and so-called "serious games" has increased in recent years. It has been noted that computer game interactions can be highly motivating, and that certain types of games requiring communication among players on the same team can provide a supportive environment for developing interactional skills. A valuable special issue of *Language Learning & Technology* from June 2014 offers an introduction to recent research: http://www.lltjournal.org/collection/col_10125_35926. The guest editors of that issue have also produced a book on the subject, *Language at Play* (J. Sykes & J. Reinhardt, Prentice Hall, 2012). *ReCALL* also had a special issue on this topic (2012) with a number of useful articles: see https://www.cambridge.org/core/journals/recall/issue/6CC6FC3F7BF098735B4710909CF4013E.

The Digital Wilds. Related to autonomy and other categories above, there is a growing interest in digitally-mediated language experiences outside of the classroom. For incidental learning, this can be based solely on language use. However, from the perspective of hte language teacher and many students, the goal is more likely to be intentional language learning, where some attention is paid to rehearsal and reflection in the pursuit of language learning goals. A 2019 special issue of *Language Learning & Technology* devoted to this topic is at https://www.lltjournal.org/collection/col_10125_58892.

The Future?

As **Goal 4, Standard 2** of TESOL's Technology Standards for Teachers states: "Language teachers regularly reflect on the intersection of professional practice and technological developments so that they can make informed decisions regarding the use of technology to support language learning and communication." That means that the work you have done in this course is only the beginning. To be effective as a technology-using language teacher in the future, you will need to view yourself as a lifelong learner in the technology realm.

Where will the field go next? Predictions made 15-20 years ago tended to focus on more intelligent tutorial software and the promise of multimedia. We were looking for opportunities to make learning more efficient and individualized through computers. Then came the web and the spread of CMC, along with social constructivist methodology, making collaboration and communication through computers a stronger focus. I am betting on a future that has room for both. Claire Bradin Siskin and I have argued for a softening of the tutor-tool distinction (Another Look at Tutorial CALL), and the rise of mobile apps has brought tutorial CALL back into

prominence. I anticipate increased recognition that blended environments building on the complementary strengths of tutorial software; text, audio, and video CMC; authentic language from the web; and the face-to-face interaction of students to teacher and students to students will yield more effective learning than any of these in isolation. Of course we will continue to see development of the new areas discussed above.

One thing we know--artificial intelligence (AI) is coming. This will likely bring applications such as more useful chatbots (applications of Siri, Google Home, Amazon's Alexa, and so on) that can respond appropriately to learner accents. We can expect to see more--and better--individualization in commercial systems. Here are some early 2018 announcements: https://e27.co/monks-hill-ventures-leads-us3-2m-ai-powered-language-learning-app-elsa-20180307/; https://www.nextpittsburgh.com/latest-news/pittsburghs-wespeke-cnn-use-technology-teach-english-world/; http://vator.tv/news/2018-02-06-quizlet-raises-20m-to-build-out-its-ai-capabilities; http://hitechnewsdaily.com/2018/03/dont-panic-grab-your-babel-fish-the-cutting-edge-earbuds-offer-real-time-translation/.

Who knows what's next? CALL will never be boring! But if you're curious, I give my own views in a 2012 article looking 20 years into the future here to **2032**: http://newsmanager.commpartners.com/tesolc/issues/2012-05-01/3.html.
