Annual Review of Applied Linguistics (2011), **31**, 19–35.
© Cambridge University Press, 2011, 0267-1905/11 $16.00
doi: 10.1017/S026719051100002X

Current Trends in Online Language Learning

Robert J. Blake

Online language learning (OLL) can take place in Web-facilitated, hybrid, or fully virtual classes. These formats are beginning to attract serious attention from the language profession and, in particular, the field of computer-assisted language learning (CALL). This article traces recent studies of online learning and then focuses in on its application to language learning through tutorial CALL, social computing, and games for language learning. I strive to show that tutorial CALL and computer-mediated communication can complement each other in the service of modern language instruction, along with the inclusion of language games. Although assessment studies of OLL remain sparse, the evidence is steadily mounting that shows that these new formats can provide learning environments conducive to successful second language development when properly integrated into the curriculum.

As a language learning environment, online instruction is just beginning to enjoy the same popularity already experienced within other disciplines for some time now (Goodfellow & Lamy, 2009; Lamy & Hampel, 2007; Meskill & Anthony, 2010). The term *online language learning* (OLL) can refer to a number of learning arrangements: a Web-facilitated class, a blended or hybrid course, or a fully virtual or online course. These delivery formats, along with the mix of the technological tools employed therein, overlap in many cases with the differences in nomenclature having more to do with the percentage of content that is delivered online (for a detailed classification, see Kraemer, 2008). Fully online language courses might have students never meeting with each other in a face-to-face context. To add to the confusion, the term *distance learning* has also been used to refer to some of these online learning environments as well as to the mix of more traditional methods such as correspondence courses and teleconferencing, teaching techniques long employed in the U.S. educational system. In this study, I focus on online language courses as previously defined here—Web-facilitated, hybrid, or totally virtual—although these three formats can also incorporate desktop videoconferencing or audioconferencing as well, as will be examined more fully.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Table 1. Postsecondary Total and Online Enrollments for Fall 2002 Through Fall 2008 (*Adapted from Allen & Seaman, 2010*)

Fall Term	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Annual Growth Rate Online Enrollment	Online Enrollment as a Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	9.6%
Fall 2003	16,911,481	1.8%	1,971,3976	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	18.2%	13.5%
Fall 2005	17,487,481	1.2%	3,180,050	36.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	9.7%	19.6%
Fall 2007	17,975,830	1.2%	3,938,111	12.0%	21.9%
Fall 2008	18,199,920	1.2%	4,606,353	16.9%	25.3%

Recent trends in online learning are sparking a lively debate in educational circles. In the period from 2002 to 2008, postsecondary online course enrollments reached 4.6 million, mostly as a result of undergraduate offerings, which were 82% of the total online offerings (Allen & Seaman, 2010). The growth rate for online courses averaged 19% over this last decade, while total enrollments have only grown by 1.5%; these trends in favor of online learning show no signs of abating. As can be seen in Table 1, online enrollments in 2008 represented approximately a quarter of the U.S. total postsecondary fall enrollment figures, mostly as a result of courses offered by large, public universities and junior colleges.

PREVIOUS STUDIES ON EFFICACY OF ONLINE LEARNING

Some educators and parents worry that these trends in increased online learning will degrade educational quality, represented for many by the gold standard of traditional face-to-face instruction (e.g., see concerns expressed in the report, "Remote and Online Learning in the University of California System," 2010; also Sanders, 2006). Ironically, few people stop to reflect on the fact that traditional classroom practices can vary widely with respect to techniques, class sizes, individual student attention, and teacher talents in ways that can often tarnish the privileged status normally accorded to the face-to-face classroom experience. By the same token, online courses also differ wildly not only in terms of their format but also in terms of their use of particular technological tools and pedagogies, making comparisons with other online courses or other traditional courses extremely difficult (with reference to language comparisons, see discussion in Blake, Wilson, Pardo Ballester, & Cetto, 2008). Duly noting these research problems, the Department of Education recently engaged SRI International to do a meta-analysis of the reported results concerning online learning (U.S. Department of Education, 2009). Surprisingly, researchers for this

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

meta-study found almost no studies that rigorously compared online learning with face-to-face instruction at the K–12 level, but there did exist a basis of comparison with postsecondary courses. The authors concentrated on postsecondary Web-based courses ($N = 51$ effect sizes drawn from 46 separate studies) and eliminated from consideration other video- or audio-based courses and stand-alone computer materials. The findings showed that students who took all or part of their classes online performed better than those in traditional face-to-face learning environments ($p < .01$); furthermore, students involved in blended/hybrid learning environments did better than those in purely online courses ($p < .001$). The authors concluded that online learning offered a modest advantage over traditional classroom instruction, but the results appeared to be highly sensitive to the amount of time on task and did not directly address the issue of OLL. Not surprisingly, learners taking online courses who spent more time working on their own did better than those in a face-to-face situation (with respect to language study only, see the online Iowa State database compiled by Grgurovic, 2007).

Perhaps this last factor alone constitutes the most important value added with respect to online learning: The medium stimulates students to spend more time engaged with the second language (L2) materials, which ultimately promotes greater learning. The U.S. Department of Education report (2009) stated, "one should note that online learning is much more conducive to the expansion of learning time than is face-to-face instruction" (p. xvii).

With reference to OLL and L2 learning, again few comparative studies exist (for a brief review, see Blake, 2009; Blake et al., 2008; Sanders, 2005), despite the clear progress made in the area of materials creation and course design within the field of computer-assisted language learning (CALL). With respect to CALL design, two areas have flourished: tutorial CALL and social computing or computer-mediated communication (CMC). Only recently have OLL practitioners begun to think in terms of integrating both tutorial CALL and CMC together. Some CALL researchers have advocated the mixing of these two types of materials through a computer gaming approach to language learning. In what follows, each of these themes will be reviewed separately: tutorial CALL, social computing CALL, and CALL gaming.

TUTORIAL CALL

Exercises for Grammar, Vocabulary, Pronunciation, and Beyond

The name *tutorial CALL* is very often associated with grammar exercises of the mechanical type or what people have often referred to in pejorative terms as *drill-and-kill*. These exercises offer language students a relatively low level of interactivity and a limited ability to construct meaning independently (Blake, 2009; Garrett, 1991). Nevertheless, mechanical grammar exercises also have a place in the L2 curriculum (Hubbard & Bradin Siskin, 2004), especially when one contemplates the importance of time on task, as has already been discussed here in connection with the U.S. Department of Education meta-analysis report

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

(2009). Peters, Weinberg, and Sarma (2009) have shown in their study of students learning languages in five Canadian universities that the students themselves appreciated the more individually oriented tutorial CALL approach over the social computing activities that involve newer Web 2.0 technologies such as blogs, wikis, and online chatting (Warschauer & Grimes, 2007).

Fortunately, language instructors now have at their disposal a plethora of tools to help them create or customize these types of exercises for online postings, such as *Quia* (http://www.quia.com/) and *Hot Potatoes* (http://hotpot.uvic.ca/), to name only a few. Commercial publishers for the more commonly taught languages are increasingly catering to market demands by providing extensive online grammar exercises as part of their regular textbook packages.

Although grammar may continue to be the principal teaching focus for many language instructors, L2 researchers have shown that lexical issues are just as important, if not more so, when it comes to reading and listening comprehension, especially as students progress beyond the novice level of about 1,000 to 2,000 words (Chun 2006; Cobb, 2007; Nation, 2001; Nation & Waring, 1997). From the students' perspective, then, developing an adequate L2 lexicon will not happen without some form of explicit instruction or graded reading program (Cobb, 2008). This viewpoint contradicts Krashen's (1989) insistence that incidental vocabulary learning from extensive amounts of reading will suffice. As explained by Cobb (2007), the computer can play a pivotal role in L2 lexical acquisition by tracking students' lexical problems and providing them with multiple exposures to new words through graded texts, glossing, or explicit instruction:

> The key problems of learning through extensive reading are clear. Corpus analysis shows that words beyond the 2,000 most frequent are unlikely to be encountered in natural reading in sufficient numbers for consistent learning to occur. Lexical profile analysis shows that the amount of new vocabulary in natural texts is at odds with both the lexical level and learning capacity of most learners. Text comparison analysis further shows that the rate of new word introduction in a text designed for native speakers is far more than most L2 learners will be able to cope with. And yet these same tools can also be employed positively to multiply learning opportunities, whether by facilitating the adaptation of texts that learners can read and learn from, or by habilitating unadapted texts through external resourcing. (Cobb, 2007, p. 60)

CALL researchers have long been convinced that multimedia word glosses make a difference in L2 lexical growth, as can be seen in Chun's (2006) excellent overview of previous research on this topic. Chun is careful to distinguish between lexical knowledge and reading comprehension, the latter being affected by many additional factors. She asserts that lexical knowledge, rather than grammatical knowledge, is significantly related to both reading and listening comprehension. The research shows that explicit instruction, including tutorial CALL (see Lafford, Lafford, & Sykes, 2007; Ranalli, 2009), has a significant impact

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

on vocabulary acquisition, but reading comprehension is more complicated and subject to a number of additional factors, including prior or background knowledge of the topic at hand. For example, Fukkink, Hulstijin, and Simis (2005) have demonstrated that L2 learners retrieve unfamiliar words faster and with less variation when they are dealing with words they have trained on. In the same vein, Yanguas (2009) found that students with access to multimedia glosses (i.e. text plus picture) outperformed all other groups, including those with only textual glosses, on measures testing reading comprehension. (For a review of work done on listening or video comprehension and with bimodal input, i.e., subtitles in the target language, see Sydorenko, 2010).

With respect to commercial applications and glossing, LeLoup and Ponterio (2005) reviewed two free Internet software programs, *WordChamp* and *UltraLingua,* which allow users to control their word searches while reading on the Web for a large number of languages. The user rolls the cursor over a word on the Web or any textual passage pasted into their special text field in order to look up the words and, in most cases, hear them pronounced correctly. *WordChamp* allows students to assemble a list of difficult words in flashcard fashion in order to continue practicing them. An interesting line for the design of future tools would be to connect the learner not only with lexical entries but also with corpora data that offer collocation information, too.

In a similar fashion to the benefits cited earlier for vocabulary growth, computer programs that focus on improving L2 pronunciation have shown some promise. Cucchiarini, Neri, & Strik (2008) examined the effectiveness of using an automatic speech recognition (ASR) system to give feedback on L2 Dutch pronunciation. Thirty immigrants studying Dutch were assigned to three groups that had access to (a) an ASR-based system for pronunciation training with automatic feedback, (b) an ASR-based system without feedback, or (c) no computer-assisted pronunciation training whatsoever. According to the human experts who evaluated overall segmental quality, the first group, which received ASR-based feedback, posted the largest mean improvement, although overall the means for these three groups did not differ significantly. The group receiving ASR-based feedback showed a significantly larger improvement than the no-feedback group in terms of the segmental quality of the problematic phonemes targeted.

Many commercially available language programs tend to include a section dedicated to pronunciation along with exercises, with the program *Tell Me More* from Auralog being one of the leading contenders because of its ASR-based feedback (see review by Lafford, 2004). This program is organized into 12 lessons, each with an abundant array of activities and exercises that deal with vocabulary development and pronunciation that can be undertaken in three modes: guided, free-to-roam, and dynamic (which promotes or demotes the students according to their progress). The program's oral workshop provides waveforms and pitch contours for both words and sentences based on the correct native speaker forms that serve as a basis of comparison for the learner's own speech production. In the phonetics exercises, the program offers learners not only waveforms and pitch curves but also a 3-D animation of the correct pronunciation that focuses on the action of the lips and tongue. Both the "Picture-Word Association"

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

and "Word Order" exercises both employ the Auralog ASR-tool where students can compare their pronunciation contours with those of native speakers.

CALL programs that tackle teaching pragmatics are relatively rare, with the notable exception being the work of Sykes and Cohen (2009) and Sykes (2009). These researchers have created CALL materials for teaching Spanish pragmatics on the Web called *Dancing with Words* (http://www.carla.umn.edu/speechacts/sp_pragmatics/home.html). The Web site is organized by pragmatic functions such as expressions of gratitude, leave-takings, requests, apologies, invitations, advice, suggestions, complaints, and reprimands. Each topic provides a detailed pragmatic explanation, a possible situation, video illustrations that provide a correct model, and self-correcting activities. The site is designed with both teachers and students in mind.

They have also collaborated to produce a synthetic immersive learning environment called *Croquelandia* to teach pragmatics that will be examined in the next section on games. However, progress in pragmatic knowledge for students using these materials appears to have been rather modest by the authors' own admission (Cohen & Sykes, 2010). Clearly, this will remain an active and promising area for future CALL research.

Intelligent CALL (iCALL)

Another avenue within tutorial CALL employs the use of natural language processing and a modicum of artificial intelligence in order to enhance the type of feedback provided to the student working alone online (Nerbonne, 2003). This approach is known as intelligent CALL, or iCALL, because it seeks to individualize instruction by providing a system of responses and interactions based on an extensive record of each user's exchanges with the tutorial CALL system (Heift, 2010a). iCALL systems should be designed to anticipate students' mistakes, offer helpful suggestions, and keep track of their behavior while using the program. Accordingly, one of the key features of an iCALL system resides in the detailed and individualized level of feedback that the program offers the student, along with keeping track of each student's most common mistakes.

To date, only three iCALL systems have been fully implemented with similar types of activities: *E-Tutor* for German, described earlier (Heift, 2010a); *Tagarela* for Portuguese (Amaral & Meurers, 2009); and *Robo-Sensei* for Japanese (Nagata, 2010). One of the advantages of an iCALL approach to language learning is that the increased level of feedback significantly raises the students' grammatical awareness, sometimes by providing preemptive feedback (Ellis, Basturkmen, & Loewen, 2001).

In the specific case of *E-Tutor* (Heift, 2010a), the program logs have compiled a learner corpus over 5 years that has tracked over 5,000 students. Each of the 15 chapters includes 70 to 80 individual exercises that practice grammar, vocabulary, listening and reading comprehension, and cultural knowledge. Sentence building is one of *E-Tutor*'s trademark activities because of the extensive feedback offered to each student response. Not only can students access and compare their own interlanguage with that of their peers, but instructors can also use these logs to guide the design of the L2 curriculum with an increased sensitivity

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

to what constitutes difficulty for the L2 learner. Such an L2 learning corpus has allowed Heift (2010a, 2010b) to discover that the more specific the feedback—and, possibly, the easier it is to correct an error—the more likely students are to engage in the error-correction process by showing an increase in learner uptake. Clearly, the iCALL approach holds great promise for the CALL field, but the time it takes to develop such a system in not significant by any means.

SOCIAL COMPUTING CALL

Textual-Based Chat, Asynchronous and Synchronous CMC

For several decades now (see Garrett, 1991), CALL researchers have joined other educators in demanding a more learner-centered classroom where students can exercise their own agency. Without a doubt, social computing and other forms of CMC constitute the single most influential technological response to this call for more learner control, because CMC gives both the instructors and students the ability to direct the conversational flow (Chapelle, 2008; Kern & Warschauer, 2000). Not all researchers regard the terms *CMC* and *social computing* as synonymous, because the latter implies the idea of social networks and a greater communicative depth (Brown & Adler, 2008; Warschauer & Grimes, 2007).

CMC, however, is a broad term that could refer to asynchronous CMC (ACMC) using e-mails, forums, blogs, wikis, or synchronous CMC (SCMC) such as instant messenger programs or Skype, with or without voice or video (for a review of CMC tools, see Lafford & Lafford, 2005). Some CMC formats, such as *Wave* (soon to be abandoned by Google), are hard to categorize, but still belong somewhere in the mix of social computing tools. *Chat* is another slippery term that is often used to refer to just textual exchanges, but it also is used to refer to more elaborate audio and video exchanges such as with Skype. This array of tools has made social computing providers such as Facebook, MySpace, and LinkedIn an integral part of our society, especially among our youth, by facilitating the growth of social networks via the computer. A Wikipedia search for social networking sites yields a staggering list of servers aimed at all age groups and interests.

With respect to L2 instruction, CMC allows instructors and learners to engage in meaningful negotiations with all of the positive benefits associated with scaffolding that have been reported in the literature for face-to-face exchanges (Smith, 2009). Typically, foreign language teachers have set up tasks that their students accomplish by helping each other in pairs through CMC chat, with or without sound or video. As the participants encounter linguistic structures that they fail to understand, they may request the assistance of their partner in order to continue working on a common solution to the assigned task. This type of CMC-assisted curriculum has been employed with native speakers and learners, as well as peer groups of learners, with proven benefits for all parties concerned. Some teachers have even used Facebook to stimulate their students to interact with each other, but not without awakening certain concerns about mixing personal networks with more academic ones. But as mentioned earlier, there are many CMC tools to choose from that do not invade the more personal

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

realm of social networking while still allowing teachers to take advantage of the power of social computing.

RESEARCH ON CMC USE AND EFFECTIVENESS

Recently, the CALL field has witnessed a veritable explosion in the number of studies examining the use and effectiveness of CMC (e.g., Hample & Hauck, 2004; Lomicka & Lord, 2009; Meskill, 2009). Researchers have analyzed the use of CMC from either an interactionist (Smith, 2009) or sociocultural perspective (Belz & Thorne, 2006; Lomicka, 2006). Both approaches have their roots in Vygotsky's (1962) notions of scaffolding or, to be more precise, the zone of proximal development, which refer to the difference between what learners can do with or without assistance.

The interactionist approach has focused more on how L2 learners negotiate meaning with their peers or with more expert interlocutors (i.e., advanced learners or native speakers) in the course of carrying out meaningful exchanges of information, especially jigsaw tasks. In general, researchers within this paradigm have followed a coding system developed more than 20 years ago by Varonis and Gass (1985) that labels the scaffolding that occurs as part of the negotiations of meaning according to the following sequence: <trigger ➔ indicator ➔ response ➔ reaction to the response>. Earlier CMC interactionist studies found that negotiations of meaning occurred in ACMC in ways similar to those exhibited in face-to-face exchanges and with the same learning outcomes (Blake 2000; de la Fuente, 2003; Pellettieri, 2000; Smith, 2003; Sotillo, 2000). More recently, Yanguas (2010) has provided data to support the notion that SCMC with video capabilities also allows students to carry out negotiations of meaning with the same success as students working in a face-to-face format. Smith (2009), however, has urged researchers to improve their methodology by supplementing text logs with video recordings in order to capture the dynamics of these online exchanges, especially with an eye to revealing students' self-initiated repairs. Sauro (2009) reported that metalinguistic feedback given during CMC session had a positive effect on grammatical accuracy, at least in the short run—results that concur with the findings from Heift's (2010b) longitudinal study (see also Lee [2007] for a more sociocultural approach).

Finally, Sauro's (2008) case study of dyad online communication showed how one student preferred to use textual chat as opposed to voice chat as a means of regaining control of the conversational dynamics as a way to equalize the power relationships in play during the completion of the task. Clearly, interactionist CMC studies still have more to say to the CALL field in the future, especially with respect to tracking the effect of feedback and charting the preferred CMC tools and their respective affordances.

Researchers using sociocultural theory (SCT) have focused on CMC more by looking at how L2 learners participate in new communities of practice—with different levels of success in using the target language and gaining an understanding of the new culture. In many cases, the central issue within SCT deals with the construction of an emerging L2 identity within a learning environment that provides

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

interpersonal and interactive scaffolding (Kramsch, 2009). Some instructors use telecollaborations or teleconferenced tandem learning with students from different countries who are learning each other's language and culture (Darhower, 2007; O'Dowd, 2006; Ware & Kramsch, 2005). The Massachusetts Institute of Technology project *Cultura* (Furstenberg, Levet, English, & Maillet, 2001) is perhaps the most widely known application of this concept of tandem learning where German, French, or Spanish students from an overseas L2 English class carry out a discussion of cultural topics in conjunction with a corresponding group of American L2 language learners. Students share their opinions on broad cultural issues using their native language to leverage maximum expressiveness and clarity, but then use their counterparts' comments phrased in the target language as classroom linguistic fodder to further their knowledge of new L2 vocabulary and structures. Understandably, these tandem exchanges will sometimes produce a number of cultural misunderstandings, precisely because L2 learners have an incomplete knowledge of the target culture. These types of electronic exchanges provide a forum to expand cultural awareness, provided that the teacher is skillful enough to keep students from becoming bogged down in cultural and ethnic stereotypes (Belz & Thorne, 2006).

Within the same classroom, Oskoz (2009) has explored how learner–learner exchanges can foster the students' linguistic improvement (i.e., microgenetic growth) as a result of the shared performance that takes place while working together on an assigned task. Lee (2007) explored a similar theme with a variety of tasks: jigsaw, spot-the-differences, and open-ended questions.

Both CMC approaches, interactionist and sociocultural, promise a rich line of investigation for the future since social computing shows no sign of losing its importance in our society.

GAMES FOR LANGUAGE LEARNING

The Nature of Language Learning Games

CALL researchers and curriculum developers have recently begun to turn to the gaming environment and the notion of play as a viable way to stimulate learning a second language (Gee, 2007; Peterson, 2006, 2010; Sørensen & Meyer, 2007; Thorne & Black, 2007). Games have the potential to combine the best of what has been developed over recent years in tutorial CALL programs with the attractive affordances provided by social computing (Thorne, 2008). Accordingly, students can work individually but also share their results by working in teams using chat programs to facilitate textual and/or audio exchanges. Usually, the visual representation of the students' personae is mediated through the use of an avatar (Peterson, 2010). Games are always task oriented or focused on play and often are accomplished by working in groups. For instance, in *World of Warcraft* (whether in Spanish, French, English, or another language), online players navigate through a fantasy world of beasts and warriors in pursuit of different quests or battle goals. In *Second Life* (*SL*), people dress in whimsical costumes in order to pursue their own social or academic agendas. In the

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Forgotten World, English learners participate in an online comic-strip drama that develops new linguistic skills while helping to solve the adventure story at hand.

Understandably, then, not all games are the same: There are single-player games, cooperative or two-player games, and massively multiplayer online role-playing games (MMOs). Each has its own rhythms, affordances, and dynamics. Multiple-player games often provide online chat during play, either through textual and/or audio exchanges. Thorne, Black, and Sykes (2009) used a tripartite classification: (a) social virtualities, such as *Second Life* or *Active Worlds* (Peterson, 2006, 2010); (b) commercial MMOs, such as *World of Warcraft* (Soares, 2010; Thorne, 2003); and (c) made-for-education synthetic immersive environments, such as *Croquelandia* (Sykes, 2011; Sykes, Oskoz, & Thorne, 2008). These different gaming platforms are all part of the virtual environment and gaming spaces that can be harnessed in the service of OLL.

What do games do that might assist students in learning in general (Gee, 2007; Prensky 2000; Squire & Jenkins, 2004; Steinkuehler, 2004, 2006) and in language learning in particular? First and foremost, games allow people to play, and language games are no exception. But games are not entirely free or unstructured play; they are *designed experiences,* as Squire (2006) described them, with defined goals and rules. Learners submit to these goals, but only if they can continue to be playful (Klopfer, Osterweil, & Salen, 2009). Playfulness itself is rather like an act of faith that invests the game with special meaning. Players accept the rules of the designed experience just as people accept the protocols of the live stage, thereby allowing the game to have verisimilitude along with variety. Verisimilitude constitutes the very essence of play—the game has to seem real, feel real, or at least allow us to pretend it is real in order to suspend disbelief.

Role-playing is another way to think about play and verisimilitude; games allow students to explore new identities in a unique state of relative pseudonymity in a persistent or ever-present game world. This quality parallels what language instructors are trying to get their students to do when they learn a second language: Expand into a new bilingual or multilingual self, something akin to what Kramsch (2009) has described with references to the multilingual subject.

The environment of *Second Life* constitutes a good example of a learning environment where play-acting can take place, although *SL* play may not constitute a game in the strict sense of the term. All this play-acting, however, has an effect on language as well. Yee and Bailenson (2007) have called this the "Proteus effect": An individual's verbal behavior is affected by his or her digital self-presentation. In other words, the ways in which students play crucially affect how they learn.

Second, and closely related to the idea of role-playing, games foster agency, allowing players to do something and construct meaning. Games make the users feel that they are being competent and independent problem solvers. Games encourage a participatory culture with different rates and learning paths in response to the gamers' interests and abilities. Within these designed experiences, the participants enjoy the freedom to fail with low risks, experiment, fashion identities, exert varying degrees of effort, and interpret. Gee (2007) concluded that games let players be producers, not just consumers, by promoting agency, control, and ownership. Game players have to think like scientists because they

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

must hypothesize, probe the micro world, get a reaction, reflect on the results, and then probe again in order to get better results.

This last phase of the process really is a reference to practice. Purushotma, Thorne, and Wheatley (2008) insisted that game design must dedicate at least as much thought about failure states as to success states—a trait that shares much in common with the stated goals of iCALL programs. In other words, repetitive practice, with instructive feedback, has to be an integral part of the game design and the learning cycle. Again, this sounds very similar to what students need to go through when learning a second language and should be part of any CALL design.

Language Games, Language Play: Research, Caveats

To date, there have been few experimental studies that examine how L2 learners fare within a virtual learning environment. Soares (2010) has begun the exploration of *World of Warcraft* as a learning platform for Spanish, using an ethnographic approach that looks at her own behavior and that of a friend. Peterson (2010) reported on six studies dealing with a German-language multiuser object-oriented domain (MOO), an English-language *SimCopter,* an ESL-based *SimCity,* a Japanese-based application programmed in *Active Worlds,* an ESL (English as a second language) example realized in *World of Warcraft,* and an Arabic language multimedia tutorial/simulation called *Tactical Iraqi.* Peterson described these six gaming experiences in positive terms, especially because they helped learners increase their target language production, negotiations of meaning, and good learner reception. Ranalli (2008) used *SimCity* to teach vocabulary and included a rigorous set of assessment measures, but only nine students participated. The use of *Croquelandia* as a learning medium has already been discussed here (Thorne et al., 2009), but Cohen and Sykes (2010) reported limited progress in developing strategic competence in L2 pragmatics competence or students working in this medium.

Curriculum development for language learning games is proceeding ahead on many fronts. With their online publication of the *Forgotten World* <http://www.theforgottenworld.net> and the *Xenos* platform, the Learning Games Network (http://www.learninggamesnetwork.org) has effectively employed games in China to teach ESL online, with an eye to expanding this environment to other languages in the near future. Languagelab.com has an extensive ESL presence in *Second Life* and has also launched *Ciudad Bonita* as a locus for teaching Spanish. Likewise, there are other locations in *SL* where speaking in languages other than English can take place spontaneously (e.g., Barcelona, *SL* coordinates: 169, 68, 23).

Without a doubt, using games for learning languages opens up an exciting new area for future research but its curricular development faces serious caveats. The literature often refers to environments such as *Second Life* as "digital dollhouses," where people just dress up and act out without much significant learning taking place. Likewise, the school-age population is increasingly intolerant of unsophisticated graphics, which increases the possibility that incursions into the gaming curriculum will become an expensive proposition. Pedagogically sound games should be able to exist in black-and-white or color, with more or

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

fewer pixels, but ultimately, the students themselves will have to determine the limits of visual acceptability. Finally, programming games, whether stand-alone or online, such as for an adventure in *Croquelandia* or *SL,* remain a thoroughly time-consuming and, consequently, expensive endeavor for most, leaving the development process accessible only to well-financed commercial ventures that have little stake in the educational curriculum or highly collaborative research groups, which are hard to maintain.

Clearly, more research is needed with respect to using games for OLL, but the fact that $125 million was spent on the first day of the release of *Halo 2* on November 9, 2004, should give our profession reason alone to be interested in games for the purposes of language learning (Squire, 2006). Games have captured the attention of today's students and, to a greater degree, the new generation coming up from the elementary ranks, as has been well documented in the forward-looking recommendations contained in the federal report *Transforming American Education* from the U.S. Department of Education (2010).

CONCLUSIONS

Fortunately, the CALL field has matured beyond the dilemma of choosing either tutorial CALL or social computing, as long as the curricular choices support activities that contribute to L2 learning (Chapelle, 2009). Both types of CALL have their place in the OLL curriculum. No doubt, the role of explicit feedback either through iCALL or CMC will continue to be a major focus for CALL researchers.

The gaming world, as described here, has not been burdened with this traditional dichotomy and simply employs both techniques when warranted in order to maintain student interest. Perhaps therein lies the importance of all activities carried out through OLL: These learning environments and tools help students maintain their interest in learning a language over a long period of time. And like it or not, learning another language to a minimal professional level (i.e., level 3 on the Interagency Linguistic Roundtable scale) is a very time-consuming activity (Blake, 2008).

Given the enthusiasm with which today's young people engage in social networking, it is quite possible that language students feel particularly comfortable connecting digitally with members of the target culture, which would enhance their digital communicative competence at the very least. The same channel might also be leveraged to connect the language classroom with other language-use areas, so that L2 students can become lifelong language learners, rather than dead-end students, at the completion of the language requirement.

ANNOTATED BIBLIOGRAPHY

Allen, I. E., & Seaman, J. (2010). *Learning on demand: Online education in the United States, 2009*. Retrieved from the Babson Survey Research Group Web site: http://www.sloan-c.org/publications/survey/index

This survey-based study of online learning in U.S. institutions of higher education (2,500 colleges and universities) was supported by the Sloan Foundation and

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

constitutes the seventh annual report on this topic. The authors documented the proportional increase in the online delivery of the postsecondary curriculum over the last decade, ending in 2008, when 25% of all course enrollments were carried out through an online format, mostly in large public institutions. Ironically, the acceptance of online learning by faculty and administrators has not changed since first measured in 2002 and only garners the approval of about 33% of faculty. Similarly, training for faculty wishing to adapt their courses in an online format has not significantly increased. When compared to face-to-face learning, more than 50% of those surveyed felt that online courses produced similar learning outcomes. A more negative vision emerged when participants were asked about the quality of complete online degree programs.

Heift, T. (2010a). Developing an intelligent language tutor. *CALICO Journal, 27*, 443–459.

Few iCALL systems have been implemented that benefit students, teachers, and researchers, and *E-Tutor* for the German language is one of them. The author described the *E-Tutor* features in clear, understanding terms so that all parties can evaluate its importance for the language curriculum. That fact that *E-Tutor* has traced the L2 interlanguage of more than 5,000 students over a period of five years establishes its value in both theoretical and practical terms.

Kramsch, C. (2009). *The multilingual subject.* Oxford, UK: Oxford University Press.

This new book from Claire Kramsch will become essential reading for anyone in the language teaching profession because she probed the essence of what it means to learn a second language from the students' perspective (e.g., emotions, memories, and perceptions) or what she called the "subjective dimensions of language." She meditates, in particular, on how language students construct a new L2 identity, drawing on the following sources: published testimonies or memoirs, learner journals, oral interviews, personal essays on what it means to be bilingual, and online chat transcripts. For the CALL field, her reflections in Chapter 6, "The Virtual Self," are particularly insightful.

Thorne, S. L., Black, R., & Sykes, J. (2009). Second language use, socialization, and learning in Internet interest communities and online games. *Modern Language Journal, 93*, 802–821.

Much research has been carried out to determine how technology can be used to teach language in an institutional setting. As a complement to this more formal learning environment, the authors concentrated on how learners use technology to learn languages outside of classroom via fan fiction communities, online games, global social networks, and other virtual realities. In broad terms, the discussion is informed by sociocultural theory and the notion of participating in communities of practice.

REFERENCES

Amaral, L., & Meurers, D. (2009). Little things with big effects: On the identification and interpretation of tokens for error diagnosis in iCALL. *CALICO Journal, 26*, 580–591.

Belz, J., & Thorne, S. L. (Eds.). (2006). *Internet-mediated intercultural foreign language education*. Boston, MA: Thomson Heinle.

Blake, R. (2000). Computer mediated communication: A window on L2 Spanish interlanguage. *Language Learning & Technology, 4*, 120–136.

Blake, R. (2008). *Brave new digital classroom: Technology and foreign language learning*. Washington, DC: Georgetown University Press.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Blake, R. (2009). The use of technology for second language distance learning. *Modern Language Journal, 93*, 822–835.
Blake, R., Wilson, N., Pardo Ballester, C., & Cetto, M. (2008). Measuring oral proficiency in distance, face-to-face, and blended classrooms. *Language Learning and Technology, 12*, 114–127.
Brown, S., & Adler, R. P. (2008). Minds on fire. Open education, the long trail, and learning 2.0. *Educause, 43*, 17–32.
Chapelle, C. A. (2008). Technology and second language acquisition. *Annual Review of Applied Linguistics, 27*, 98–114.
Chapelle, C. A. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *Modern Language Journal, 93*, 741–753.
Chun, D. (2006). CALL technologies for L2 reading. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 81–98). CALICO Monograph Series (Vol. 5). San Marcos, TX: CALICO.
Cobb, T. (2007). Computing the vocabulary demands of L2 reading. *Language Learning & Technology, 11*, 38–63.
Cobb, T. (2008). Commentary: Response to McQuillan and Krashen (2008). *Language Learning & Technology, 12*, 109–114.
Cohen, A., & Sykes, J. (2010). Language learner strategies and their effect on speech act performance. *Applied Linguistics Forum, 30.* Retrieved from http://www.tesol.org//s_tesol/article.asp?vid=142&DID=13196&sid=1&cid=695&iid=13190&nid=2857
Cucchiarini, C., Neri, A., & Strik, H. (2008). The effectiveness of computer-based corrective feedback for improving segmental quality in L2-Dutch. *ReCALL, 20*, 225–243.
Darhower, M. (2007). A tale of two communities: Group dynamics and community building in a Spanish-English telecollaboration. *CALICO Journal, 24*, 561–589.
de la Fuente, M. J. (2003). Is SLA interactionist theory relevant to CALL? A study of the effects of computer-mediated interaction in L2 vocabulary acquisition. *Computer Assisted Language Learning, 16*, 47–81.
Ellis, R., Basturkmen, H., & Loewen, S. (2001). Preemptive focus on form in the ESL classroom. *TESOL Quarterly, 35*, 407–432.
Fukkink, R. G., Hulstijin, J., & Simis, A. (2005). Does training of second language word recognition skills affect reading comprehension? An experimental study. *Modern Language Journal, 89*, 54–75.
Furstenberg, G., Levet, S., English, K, & Maillet, K. (2001). Giving a virtual voice to the silent language of culture: The *Cultura* Project. *Language Learning & Technology, 5*, 55–102.
Garrett, N. (1991). Technology in the service of language learning: Trends and issues. *Modern Language Journal, 75*, 74–101.
Gee, J. P. (2007). *What video games have to teach us about learning and literacy* (2nd ed.). New York, NY: Palgrave Macmillan.
Goodfellow, R., & Lamy, M-N. (Eds.). (2009). *Learning cultures in online education.* London, UK: Continuum Books.
Grgurovic, M. (2007). Research synthesis: CALL comparison studies by language skills/knowledge. Retrieved from http://tesl.engl.iastate.edu:591/comparison/synthesis.htm
Hample, R., & Hauck, M. (2004). Towards an effective use of audio conferencing in distance language courses. *Language Learning & Technology, 88*, 166–182.
Heift, T. (2010b). Prompting in CALL: A longitudinal study of learner uptake. *Modern Language Journal, 94*, 198–216.
Hubbard, P., & Bradin Siskin, C. (2004). Another look at tutorial CALL. *ReCALL, 16*, 448–461.
Kern, R. G., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 1–19). Cambridge, UK: Cambridge University Press.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Klopfer, E., Osterweil, S., & Salen, K. (2009). Moving learning games forward: Obstacles, opportunities & openness: An educational arcade paper. Retrieved from http://education.mit.edu/papers/MovingLearningGamesForward_EdArcade.pdf

Kraemer, A. (2008). Formats of distance learning. In S. Goertler & P. Winke (Eds.), *Opening doors through distance language education: Principles, perspectives, and practices* (pp. 11–42). CALICO Monograph Series (Vol. 7). San Marcos, TX: CALICO.

Krashen, S. (1989). We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis. *Modern Language Journal, 73*, 440–464.

Lafford, B. (2004). Review of *Tell Me More. Language Learning & Technology, 8*, 21–34.

Lafford, B., Lafford, P., & Sykes, J. (2007). *Entre el dicho y hecho . . .* : An assessment of the application of research from second language acquisition and related fields to the creation of Spanish CALL materials for lexical acquisition. *CALICO Journal, 24*, 497–529.

Lafford, P., & Lafford, B. (2005). CMC technologies for teaching foreign languages: What's on the horizon? *CALICO Journal, 22*, 679–710.

Lamy, M.-N., & Hampel, R. (2007). *Online communication in language learning and teaching.* Basingstoke, UK: Palgrave Macmillan.

Lee, L. (2007). Focus-on-form through collaborative scaffolding in expert-to-novice online interaction. *Language Learning & Technology, 12*, 53–72.

LeLoup, J. W., & Ponterio, R. (2005). On the net: Vocabulary support for independent online reading. *Language Learning & Technology, 9*, 3–7.

Lomicka, L. (2006). Understanding the other: Intercultural exchange and CMC. In. L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 211–236). CALICO Monograph Series (Vol. *5*). San Marcos, TX: CALICO.

Lomicka, L., & Lord, G. (Eds.). (2009). *The next generation: Social networking and online collaboration in foreign language learning*. CALICO Monograph Series (Vol. *8*). San Marcos, TX: CALICO.

Meskill, C. (2009). CMC in language teacher education: Learning with and through instructional conversations. *Innovation in Language Learning and Teaching, 3*, 51–63.

Meskill, C., & Anthony, N. (2010). *Teaching languages online*. Bristol, UK: Multilingual Matters.

Nagata, N. (2010). Some design issues for an online Japanese textbook. *CALICO Journal, 27*, 460–476.

Nation, P. (2001). *Learning vocabulary in another language.* Cambridge, UK: Cambridge University Press.

Nation, P., & Waring, R. (1997). Vocabulary size, text coverage and word lists. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition, and pedagogy*, (pp. 6–19). Cambridge, UK: Cambridge University Press.

Nerbonne, J. A. (2003). Computer-assisted language learning and natural language processing. In R. Mitkov (Ed.), *The Oxford handbook of computational linguistics* (pp. 670–698). Oxford, UK: Oxford University Press.

O'Dowd, R. (2006). The use of videoconferencing and e-mail as mediators of intercultural student ethnography. In J. Belz & S. L. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 86–119). Boston, MA: Thomson Heinle.

Oskoz, A. (2009). Learners' feedback in online chats: What does it reveal about students' learning? *CALICO Journal, 27*, 48–68.

Pellettieri, J. (2000). Negotiation in cyberspace: The role of chatting in the development of grammatical competence. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 59–86). Cambridge, UK: Cambridge University Press.

Peters, M., Weinberg, A., & Sarma, N. (2009). To like or not to like! Student perceptions of technological activities for learning French as a second language at five Canadian institutions. *Canadian Modern Language*, *65*, 8679–8896.

Peterson, M. (2006). Learner interaction management in an avatar and chat-based virtual world. *Computer Assisted Language Learning, 19*, 79–103.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Peterson, M. (2010). Computerized games and simulations in computer-assisted language learning: A meta-analysis of research. *Simulation & Gaming, 41*, 72–93.
Prensky, M. (2000). *Digital game-based learning.* New York, NY: McGraw-Hill.
Purushotma, R., Thorne, S. L., & Wheatley, J. (2008). *10 Key principles for designing video games for foreign language learning*. Paper produced for the Open Language & Learning Games Project, Massachusetts Institute of Technology Education Arcade. Retrieved from http://knol.google.com/k/10-key-principles-for-designing-video-games-for-foreign-language-learning#
Ranalli, J. (2008). Learning English with *The Sims:* Exploiting authentic computer simulation games for L2 learning. *Computer Assisted Language Learning, 21*, 441–455.
Ranalli, J. (2009). Prospects for developing L2 students' effective use of vocabulary learning-strategies via Web-based training.*CALICO Journal, 27*, 161–186.
Remote and online instruction at the University of California: A report from the Academic Senate Special Committee on remote and online instruction and residency. (2010). Retrieved from http://www.universityofcalifornia.edu/senate/reports/HP_MGYreRpt_Spec_Cte_Online_Remote_Instruction_FINAL.pdf
Sanders, R. (2005). Interaction and online learning communities. In C. Crawford, D. Willis, R. Carlsen, I. Gibson, K. McFerrin, J. Price, & R. Weber (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference, 2005* (pp. 2320–2325). Chesapeake, VA: Association for the Advancement of Computing in Education.
Sanders, R. (2006). The "imponderable bloom": Reconsidering the role of technology in education. *Innovate, 2.* Retrieved from http://www.innovateonline.info/index.php?view=article&id=232
Sauro, S. (2008). Strategic use of modality during synchronous CMC. *CALICO Journal, 27*, 101–117.
Sauro, S. (2009). Computer-mediated corrective feedback and the development of L2 grammar. *Language Learning & Technology, 13*, 96–120.
Smith, B. (2003). Computer-mediated negotiated interaction: An expanded model. *Modern Language Journal, 87*, 38–58.
Smith, B. (2009). Revealing the nature of SCMC interaction. In A. Mackey & C. Polio (Eds.), (*Multiple perspectives on interaction* (pp. 197–225). Mahwah, NJ: Erlbaum.
Soares, D. (2010). *Second language pragmatic socialization in* World of Warcraft. Unpublished doctoral dissertation, University of California, Davis.
Sotillo, S. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology, 4*, 82–119.
Sørensen, B. H., & Meyer, B. (2007). Serious games in language learning and teaching: A theoretical perspective. In *Proceedings of the 2007 Digital Games Research Association Conference* (pp. 559–566). Tokyo, Japan: Digital Games Research Association.
Squire, K. (2006). From content to context: Videogames as designed experience. *Educational Researcher, 35*, 19–29.
Squire, K., & Jenkins, H. (2004). Harnessing the power of games in education. *Insight, 3*, 5–33.
Steinkuehler, C. A. (2004). Learning in massively multiplayer online games. In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon, & F. Herrera (Eds.), *Proceedings of the Sixth International Conference of the Learning Sciences* (pp. 521–528). Mahwah, NJ: Erlbaum.
Steinkuehler, C. A. (2006). Why game (culture) studies now? *Games and Culture, 1*, 97–102.
Sydorenko, T. (2010). Modality of input and vocabulary acquisition. *Language Learning & Technology, 14*, 50–73.
Sykes, J. M. (2009). Learner requests in Spanish: Examining the potential of multiuser virtual environments for L2 pragmatic acquisition. In L. Lomika & G. Lord (Eds.), *The next generation: Social networking and online collaboration* (pp.199–234). CALICO Monograph Series (Vol. 8). San Marcos, TX: CALICO.
Sykes, J. M. (2011). Multi-user virtual environments: User-driven design and implementation for language learning. In G. Vincenti & J. Braman (Eds.), (*Teaching through multi-user virtual environments: Applying dynamic elements to the modern classroom* (pp. 283–305). Hershey, PA: IGI Global.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press

Sykes, J. M., & Cohen, A. D. (2009). Learner perception and strategies for pragmatic acquisition: A glimpse into online learning materials. In C. Dreyer (Ed.), *Language and linguistics: Emerging trends* (pp. 99–135). Hauppauge, NY: Nova Science.

Sykes, J., Oskoz, A., & Thorne, S. L. (2008). Web 2.0, synthetic immersive environments, and mobile resources for language education. *CALICO Journal, 25*, 528–546.

Thorne, S. L. (2003). Artifacts and cultures-of-use in intercultural communication. *Language Learning & Technology, 7*, 38–67.

Thorne, S. L. (2008). Transcultural communication in open Internet environments and massively multiplayer online games. In S. Magnan (Ed.), *Mediating discourse online* (pp. 305–327). Amsterdam, The Netherlands: John Benjamins.

Thorne, S. L., & Black, R. (2007). Language and literacy development in computer-mediated contexts and communities. *Annual Review of Applied Linguistics, 27*, 133–160.

Thorne, S. L., Black, R., & Sykes, J. (2009). Second language use, socialization, and learning in Internet interest communities and online gaming. *Modern Language Journal, 93*, 802–821.

U.S. Department of Education, Office of Educational Technology. (2010). *Transforming American education: Learning powered by technology*. Retrieved from http://www2.ed.gov/about/offices/list/os/technology/netp.pdf

U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. (2009). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. Retrieved from http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

Varonis, E. M., & Gass, S. M. (1985). Non-native/non-native conversations: A model for negotiation of meaning. *Applied Linguistics, 6*, 71–90.

Vygotsky, L. (1962). *Thought and language.* Cambridge, MA: MIT Press.

Ware, P., & Kramsch, C. (2005). Toward an intercultural stance: Teaching German and English through telecollaboration. *Modern Language Journal, 89*, 90–105.

Warschauer, M., & Grimes, D. (2007). Audience, authorship, and artifact: The emergent semiotics of Web 2.0. *Annual Review of Applied Linguistics, 27*, 1–23.

Yanguas, I. (2009). Multimedia glosses and their effect on L2 text comprehension and vocabulary learning. *Language Learning & Technology, 13*, 48–67.

Yanguas, I. (2010). Oral computer-mediated interaction between L2 learners: It's about time. *Language Learning & Technology, 14*, 72–79.

Yee, N., & Bailenson, J. (2007). The Proteus effect: The effect of transformed self-representation on behavior. *Human Communication Research, 33*, 271–290.

https://doi.org/10.1017/S026719051100002X Published online by Cambridge University Press