**Introduction to the Special Issue**

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**EVOLUTION OF THE CALICO JOURNAL**  
The *CALICO Journal* is 25 years old! The articles in the *CALICO Journal* bear witness to the evolution of computer-assisted language learning (CALL) as the field has passed from infancy to adolescence and now into young adulthood. A moment of reflection quickly leads to the question of how much has changed in CALL as suggested by the kinds of articles published in the *Journal* over the years. A review of those articles shows the extent to which things have changed (and also the extent to which things that attracted our attention in 1983 continue to hold our attention in 2008).

In the *Journal’s* infancy, many articles understandably focused on solving basic software and hardware problems, necessary to simply be able to use the computer for language learning and language teaching. Articles such as the following abounded:


Perhaps Ariew’s enthusiastic statement in 1984 best summarizes the general situation in the early days.

> It is possible to imagine CAI activities which make use of all of the following: letters of various sizes, styles and emphasis, line drawings, color drawings, graphs and tables, animation, sound in the form of melodies, noises, and possibly voice with background music. (p. 44)

Although we must still grapple with thorny technical problems in certain areas (e.g., videoconferencing), the incremental increases in the power and built-in capabilities of the computer since 1983 have enabled us to take such basic technical issues for granted for several years now. (As a related aside, the old guard among us probably remembers having to cart a large amount of heavy equipment [e.g., desktop computer, computer monitor, videodisc player, etc.] to CALICO conferences for presentations. Now we simply bring our laptops in carrying cases or even just USB flash drives in our pockets.)

Many of the articles in the early issues of the *Journal* consisted of reports on a variety of development projects, and many of these projects focused on text-based drill-and-practice courseware materials. To overcome the hurdles of computer programming, a number of authoring systems were developed to enable teachers to create language-learning materials...
without having to contend with the intricacies of the underlying computer code (e.g., CALIS, WinCALIS, Dasher, and MacLang). As computers became capable of supporting multimedia components, later versions of many of these authoring systems contained provisions for incorporating sound and pictures in lessons. Interactive video (IAV) projects, using analog video stored on videodiscs, were also well represented from the beginning. Most IAV projects sought to extend student learning beyond the boundaries of drill-and-practice exercises, and some of the most interesting strove to create microworlds in which students interacted with characters portrayed in the video being played on the videodisc player through the computer (Gale, 1983; Schrupp, Bush, & Mueller, 1983). Videodisc technology continued to hold the interest of developers and researchers up through the early 1990s (see Hendricks, 1993).

Then came the web. Beginning in the mid 1990s, exploding in the late 1990s, and continuing unabated to this day, the internet and web have come to dominate work in CALL. Fidelman's article, "A Language Professional's Guide to the World Wide Web," in 1995-1996 heralded the onset of a large number of articles on the web. Webquests, MOOs (see Donaldson & Köttner, 1999), MUDs, and email formed the backbone of early exploration of the web. Following on the heels of early studies of web-based learning activities, reports began to appear on hybrid courses in which some of the time normally spent on learning in the classroom was replaced by time spent on learning on the web outside the classroom. A series of articles on the Language Online project at Carnegie Mellon University provided a thorough examination and detailed analysis of hybrid courses (see Green & Youngs, 2001; Chenoweth & Murday, 2003; Chenoweth, Ushida, & Murday, 2006). By 2003, the use of the web for computer-mediated communication (CMC), both synchronous and asynchronous, became the major focus of many articles, culminating in a special issue of the Journal on CMC edited by Steven Thorne and Scott Payne in 2005 (see below). Individual articles on CMC are far too numerous to mention individually, but, collectively, they have unquestionably broadened research horizons in CALL, especially in sociocultural dimensions of second language acquisition (SLA).

Although many research areas in CALL have evolved over time, others continue to hold the attention of the profession and have had a more or less constant presence in the CALICO Journal. The specific questions investigated in these areas may have changed as we have progressed in our understanding, but the underlying research area has remained much the same. Six of these areas of research are described below.

First, reading and listening supported by hypertext annotations has remained a mainstay of the Journal from the beginning. A query on 'reading' and 'listening' as a keyword in the Journal yielded over 30 articles with one word or the other in the title of the article. Although definitive conclusions cannot be easily drawn from the extensive work in the area, it is clear that developers and researchers have found the computer to be an ideal device for storing and displaying text-based information to students.

Second, computer-assisted writing of compositions, both in foreign languages and English as a second language, has had a notable presence in the Journal (e.g., Reid, Lindstrom, McCaffrey, & Larson, 1983; Brock, 1990; Scott & new, 1994; Burston, 2001; Hegelheimer, 2006; Ho & Savignon, 2007). The computer has clearly proven its worth in performing text analysis and also providing feedback to students as they write and edit compositions.

Third, a flurry of articles on natural language processing (NLP) appeared in the late 1980s (e.g., A. Sanders & R. Sanders, 1987; Molla, A. Sanders, & R. Sanders, 1988; Bailin, 1988; Borchardt, 1988), and others appeared in the mid 1990s and onward (e.g., Nagata, 1995; Holland, 1999; Heift, 2002). Early work in NLP focused primarily on programming considerations while later work has focused more on student use of the software and their gains in learning derived from its use.
Fourth, student’s use of language-learning materials—as captured in computer logs—has appeared as a leitmotif, coming to the surface at various times over the course of the Journal’s history (e.g., Simonsen, 1985; Teichert, 1985; Chapelle & Mizuno, 1989; Scott, 1990; Liou, 1997; Yoshii & Milne, 1999; Frommer & Foelsche, 1999; Heift, 2002; Weinberg, 2005; Hegelheimer, 2006). Investigation of students’ actual use of program components can offer valuable insights with respect to instructional design and other issues (e.g., learner autonomy), but logistical problems in collecting and analyzing student data can make work in this area rather arduous.

Fifth, computer-assisted testing also appears as a leitmotif in the Journal (e.g., Larson & Madsen, 1985; Madsen, 1986; Meunier, 1994; Noijons, 1994; Burston & Monville-Burston, 1995; Larson, 2000; Gorsuch, 2004; Zabaleta, 2007). Whether serving as a collection mechanism for students’ oral/written answers on a test or adapting to students’ answers on a test to make the testing process more efficient, computer-based testing has been shown to have several advantages over paper-based testing.

Sixth, software evaluation, a major feature of CALICO for many years, appeared as a research topic in the mid 1980s (Decoo, 1984; England, 1984; Hubbard, 1988) and then again after 2000 (Burston, 2003; Zhao, 2003; Chapelle, 2005; Jamieson, Chapelle, & Preiss, 2005). While the topic of software evaluation may lead to a feeling of discomfort on the part of some developers, it will have a consistently important role to play in CALL.

This short review of articles published in the CALICO Journal cannot of course be considered as an exhaustive description of the scope of the research and development projects reported in the Journal. Other articles not mentioned have certainly contributed to the advancement of the field of CALL, but space does not permit their inclusion here.

Two special features were added to the CALICO Journal around the year 2000. In 1999, CALICO began publishing a special issue each year (except 2007) that was devoted to a specific theme. The guest editors of the special issues brought together leading researchers and developers in the US and abroad who provided timely updates and valuable insights on topics central to the profession. The following special issues have been published up to this point:

Beginning in 2000, CALICO’s Editorial Board has selected an article in each volume of the *Journal* as the outstanding article of that volume. Award winners for outstanding articles include:


A third feature has recently been added to the *CALICO Journal*. The 2006-2007 volume of the *Journal* was published both in print and online; since September 2007 it has been published exclusively online. Online publication offers several advantages to readers. It makes articles much more quickly available to readers at the CALICO website (https://calico.org/p-5-Calico%20Journal.html); they no longer have to wait for their printed copy to arrive or to go to a library to read articles. Readers can still read articles in print by downloading them from the website. In addition, online publication supports keyword queries in all the articles published in the *Journal* from its inception (see Hubbard in this issue), making literature searches much more efficient. Finally, all articles (after a 3-year embargo of articles reserved for members and subscribers, currently September 2005 to May 2008) are available free of charge to anyone who wishes to consult them.

**THE CURRENT ISSUE**

The current issue contains 12 articles; some of the articles adopt an historical perspective to review trends in the field of CALL, others focus on issues currently facing the profession, and yet others look forward to future developments.

Nina Garrett cautions us not to disregard previous work done in CALL as we undertake current research and development projects. Garrett emphasizes the fact that knowledge of what has been achieved in the past is one of the ways to avoid the ‘reinventing-the-wheel’ syndrome (and it gives due recognition to pioneers in the field). Philip Hubbard, taking advantage of the search function in the online version of the articles, analyzes the ways in which authors have used the word ‘theory’ and raises the question of why there are not “native CALL” theories. As Hubbard suggests, developing native CALL theories would indeed establish
CALL as an independent discipline, separate from—but obviously related to—SLA. Linda Jones examines the evolution of the use of technology in listening comprehension and raises a number of questions that function as guideposts to future research. Most of us would agree that multimedia clearly provides a rich learning environment for students, but, Jones wonders, how specific multimedia features can be designed to help students significantly improve their aural comprehension. Similarly, François Tochon reviews the varied uses of video feedback in teacher education over time and its multiple roles in teacher education practices. He affirms that the current iteration of video feedback leads to much more highly participative and collaborative learning situations for all involved. Trevor Shanklin surveys the changing nature of language laboratories as digital media have now become prevalent in most universities. Focusing more on technical issues, Shanklin describes the ways in which students can make effective use of current digital technologies. Michael Bush takes a long view of work undertaken in CALL and questions how much language-learning progress has really been made. He asserts that pedagogical considerations and individual learners’ needs, not the newest generation of gadgets, should be the driving force in CALL research and development. George Chinnery questions the adequacy of the term ‘CALL’ to describe the field and proposes instead “e-language learning and teaching” in order to capture the breadth of activities. He argues that e-language learning and teaching represents the productive, informative, collaborative, communicative, and aggregative nature of today’s approaches to language learning.

Paula Winke and Senta Goertler analyze the readiness of students to make use of technological tools, and they identify problems in students’ access to specialized language-learning tools and their literacy in the use of these tools. Their survey of students at Michigan State University gives a realistic, and somewhat sobering, view of the degree to which students actually use technology for language learning and underscores the pervasive need for learner training. Mathias Schulze takes inventory of the advances in intelligent CALL (ICALL) and describes the context of the use of natural language processing (NLP) tools in language learning. Schulze lists three goals that must be met to ensure continuing progress in the field: opportunities for sustained discussions of research and development relevant to ICALL, joint discussions between CALL/SLA researchers and computational linguists/NLP experts, and additional empirical studies evaluating the effectiveness of ICALL systems. Julie Sykes, Ana Oskoz, and Steven Thorne survey the expanding number of CMC opportunities for students in online virtual worlds. They conclude that synthetic immersive environments and multiplayer online games hold a great deal of promise for language learning. Jessamine Cooke-Plagwitz takes an honest look at the online communities supported by the very popular Second Life. She points out that while there are significant advantages for language learners in Second Life, there are also some problems that educators need to take into account to support students’ successful participation in Second Life’s communities. Steven Thorne and Jonathon Reinhardt propose exploiting the potential of web 2.0 technologies to create bridging activities for language learners at the advanced level. They suggest that bridging activities have the potential not only to strengthen students’ language proficiency as defined by more traditional views of language competency but also to enable students to fully engage in the use of communicative technologies commonly found in today’s world.

The articles above do not circumscribe all the activities currently being undertaken in CALL; that would be a difficult task indeed. Nevertheless, taken together, they establish an historical perspective, describe current research, and anticipate future developments, all of which provide a context in which to understand the status of CALL today.

This special issue commemorates the CALICO Journal’s silver anniversary. The variety of the articles in the special issue demonstrates the remarkable range of activities in CALL, some of which were unimaginable in the early days of our field. If there is a general conclu-
sion that can be drawn from the articles published in the *Journal* over the past 25 years and those in this special issue, it is that the diversity of topics addressed in the *Journal* reflects the immense richness of our field and the continually developing vistas for new research opportunities. What will the golden anniversary issue of the *CALICO Journal* look like in 2033?

**REFERENCES**

The articles listed below can be read and downloaded at the CALICO website (https://calico.org/p-5-CALICO%20Journal.html)


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