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ADFL Bulletin Vol. 32, No. 3 (Spring 2001), pp. 102–115

ISSN: 0148-7639

CrossRef DOI: 10.1632/adfl.32.3.102

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Technology Trends in Faculty Development, Preprofessional Training, and the Support of Language and Literature Departments

Joel D. Goldfield

THE proliferation of computerized language laboratories, computer-based tools for literary research, and software for computer-assisted language learning (CALL) has created a need for more concerted development efforts for faculty members. I and many of my colleagues seek to identify, demonstrate, and evaluate suitable materials that we can then integrate into our curricula. Unfortunately, administrative, pedagogical, and historical problems have impeded such progress on many campuses. While readers will quickly recognize some or all of these obstacles, they will probably not have considered them simultaneously. Supported by occasional statistical references, this discussion of faculty development with technology confronts glaring issues that appear intertwined and that I have encountered in my research, conference presentations, consultations, and workshops on several dozen campuses over the past fifteen years. I include resources and recommendations to assist in planning for the integration of technology through faculty hires, administrative advocacy, and faculty development initiatives, concentrating on those involving CALL or distance learning.

Planning for the Integration of Technology through Hiring

The most impressive joint undertaking within our discipline has been the proficiency and standards movement, whose guidelines and resultant practices are exerting a positive effect on lesson plans and assessment at all levels of language instruction (Jackson; Jackson et al.; Hadley).¹ Its organizing principles also assist the textbook and software author in developing instructional

materials that can potentially serve a variety of learners. However, many of us are watching with interest to see how the movement is affecting postsecondary language instruction and how it will affect new hires at various types of institutions, particularly as mass retirements begin to take place and as technology plays an ever-greater role in job descriptions and curricula.

Judging partially by the trends in ads in the MLA's *Job Information List*, the *Chronicle of Higher Education*, and computer-based discussion groups such as the Language Learning and Technology International Information Forum (LLTI),² we may find our profession somewhat unprepared for providing directors, managers, and computer specialists for language-learning resource centers. Many of the institutions advertising in these forums seek to hire individuals with a BA or MA degree; strong technical, computer programming, or Web design skills; and a background in foreign languages. The job characteristics may explicitly or implicitly involve those colleagues in the tutoring of faculty members in pedagogical matters as applied to software design or classroom applications. Sharon Scinicariello succinctly describes many of these characteristics while tracing the evolution of the language resource center. Some job descriptions seek candidates who not only possess all the skills mentioned earlier but also are qualified to teach in a language and literature department. Yet the combination of knowledge areas, technical expertise, and communication skills needed seems unusual for both our graduate programs and the discipline in general, leading some deans to hire consultants to help identify suitable candidates. Without the

advice of a well-informed colleague, many departments until recently have created job descriptions containing desiderata for a range of technical skills that defies satisfaction by most mortals, ensuring that the institution will be disappointed by the applications it receives.

Unlike many past job descriptions, current ones usually recognize the effect the hirees' work and decisions will have on their pedagogical mission: more and more advertisements specify strong interpersonal and communications skills and a background in teaching. Institutions are also clamoring for instructional designers who understand faculty members' needs and who can help develop pedagogically sound and supportable computer-based materials. Such individuals must possess considerable maturity and are often not long for the academic world when private industry, with its usually greater resources, comes calling (Carnevale).

A few institutions prefer or require someone whose traditional literary PhD or PhD in second language acquisition is complemented by managerial and technical training. Participants at the 1999 ADFL Seminar East noted the apparent dearth of faculty members with the training to accomplish the new tasks described above and thus their departments' reliance on graduate students. This match between professional training and institutional needs is compounded by the history and state of our profession and by the tendency of technology to exacerbate the negatives while accentuating the positives in teaching and learning, following the zigzag path that James Burke and Robert Ornstein have described in *The Axemaker's Gift* and similar publications.

My experience in conducting research for Fairfield University's first accreditation report on our information resources, in conducting development workshops for faculty members, and in assisting in technological deliberations on other campuses suggests that many humanities departments are insufficiently involved in the technical planning and support decisions that will affect their teaching and research. A number of administrative or organizational factors can play a role in this situation. What may be lacking are consultation with deans, vice presidents, or provosts; departmental representation on the appropriate faculty committees; and a roundtable involving departments and the division responsible for academic computing. But a problem of articulating technology to academic needs often owes its genesis to underlying infrastructural causes not within the immediate grasp of faculty members to solve. While each institution has its particular administration, mission, size, and student body, it must still find the proper pivotal administrators to manage the academic budget, the mission for technology, and the link to administrative computing. The difficulty in doing so or in finding the best professional match with the necessary administrators is readily evident in the surprisingly diverse types of technology positions advertised in the *Chronicle of Higher Education*,

for example. A study of most of these descriptions and titles over the past four years turns up a wide range of directorial or policy-making positions, such as "Director of Web Technologies"; "Division Head: Computer and Communications Technologies"; "Director of Academic Computing"; "Dean of Technology"; "Assistant Vice President for Information Technology"; and "Vice Chancellor for Information Resources." There are other gradations of responsibility, of course. The descriptions often indicate that the hiree will report to other directors, to deans, a vice president, a vice provost, a provost, a president, or a chancellor. Perhaps we in humanities departments should start on a level manageable for our own mission, for seldom do the administrators who are ultimately responsible for our technology needs report to a superior in the academic division, where our work and that of our students is clearly centered. We might wonder about the apparent lack of articulation between academic and administrative computing. How might our departments make a better case for obtaining funds relevant to our missions?

Well-placed liaisons and able departmental advocates on faculty or administrative committees can provide at least a partial remedy to the apparent dearth of representation in guiding and supporting language and literature students, faculty members, and staff members in making decisions involving academic computing. These liaisons might be instructors well versed in computer technologies or a director of the language laboratory or resource center with significant language-teaching experience and familiarity with departmental needs. (Occasionally, this director may even be a tenurable faculty member, and such status makes sense in light of the job's importance in the academic mission.) But since a significant amount of the director's time may be spent on office details and supervising a staff of students and professionals, a nonstudent manager might be preferable for daily operations and some staff training. The director would be responsible for providing workshops for faculty members, high-level staff training (teaching), budgeting, facilitating the acquisition of appropriate technologies and products, and consulting closely with faculty members, administrators, committees, and campus-wide technical staff. These efforts have strong pedagogical, didactic, and disciplinary implications and they connect the director directly to the academic mission. Faculty development has also been successfully carried out in teams, such as one made up of a director or humanities computing specialist and a faculty member.

Our institutions might thus consider a joint appointment for a language-learning center director when the candidate can qualify as a faculty member. There has to be an adequate budget for managerial staff support because of the amount of time that must also be spent on office work, on looking ahead to the upgrading of technologies, on evaluating and ordering materials, on sounding out faculty members on their needs, and on

salvaging lost documents or malfunctioning equipment when no technicians are available from the academic computing division.

The language laboratory director-teacher position requires a combination of interpersonal work skills, expertise in second language acquisition or methodology, and budgetary-managerial experience, which most graduate students and faculty members are less likely to have developed.³ Lisa Frumkes and Nina Garrett have implied that graduate students, our future junior faculty, now find themselves in graduate programs where their mentors are not able to articulate what technologies might be useful to their careers. The faculty members “[. . .] do not in fact know what [the graduate students] really need, what is relevant to their particular pedagogical or research aims, or what they are—realistically—likely to be able to learn and to make use of” (153). The authors go on to note, “Neither providing them with general training in the use of a variety of currently available hardware and software nor using them to work for faculty on mechanical tasks like data entry or scanning and digitizing will prepare them to undertake meaningful technology based initiatives in their teaching or their research” (157). A more direct interweaving of talents, skills, and content areas is necessary to prepare faculty members and especially the colleagues who will support them. We can thus entertain the idea that a new discipline requiring special training and experience has taken shape, one that reflects Benjamin Bloom’s taxonomic sensibilities, and which Alexander Dunkel suggests by analogy when describing with delight, “the new synergistic CD-ROM lessons that are not textbook, workbook, audiotapes, and videotapes in separate units but one interwoven unit that is greater than the sum of its parts” (71).

The new media and synergies are playing out in new configurations of our careers. Emblematic of changes in faculty job descriptions are hybrid positions such as my own or perhaps even more synergistic ones such as Janet Murray and Robert P. Kolker’s. Murray’s *Hamlet on the Hollodeck* interlaces her expertise in Victorian fiction with new technologies and types of narratives. A recent article describes Kolker’s journey from English, to teaching film studies and communication arts; heading the department of radio, television, and film; returning to the English department; writing a textbook with an accompanying CD-ROM; then changing employment to Georgia Tech, where he and Murray are now “collaborating on a digital edition of *Casablanca* that will be linked to a Web site with scholarly supporting material [. . .].” The article comments that Murray “sees the digital medium as its own medium” (Basinger and Heller). We are now seeing and will be seeing more of such trajectories in language and literature careers. Consequently, we will need faculty members’ and administrators’ support for these new specialities and the development of opportunities that nurture them.

Departmental Advocacy for the Integration of Technology

Research by James Pusack and Sue Otto (36–37, 40–43) and Joanne Burnett and Mary Ann Lyman-Hager (223, 227), among others, points out what many faculty members already suspect may dampen interest in trying to integrate technology into research, classroom activities, or extramural use of guided homework: the lack of access, reliability, support, and proof of effectiveness. My own experience suggests that without assurances of acceptable quality in these areas, often in advance of a faculty development opportunity, some colleagues will simply refuse to participate. Others may only attend with a heavy heart. An official imprimatur serves as a signal of support: a clear technology budget allocation over at least three years; a dean’s or provost’s welcome before a development activity (e.g., a faculty presentation, a conference); a free lunch and a daily stipend for faculty members who participate in the workshop. A research or development committee may already exist that would happily promote and even subsidize its colleagues’ cause. All these signs can carry much weight in reassuring us that our colleagues in other departments, as well as the administration, value our development efforts. In the absence of significant administrative support, a strong development initiative for faculty members can quickly cause political and technological fault lines to appear.

Besides the issues of administration and support of technology, the integration of software into one’s own course sections or those of other faculty members requires certain attitudinal and infrastructural considerations. At least two historical oppositions exist: the one between the language and literature branches of some institutions and the one between our profession’s conception of the foreign language-literature mission and society’s view of it. The first opposition may be revealed, especially in larger institutions, by departmental names like Department of Foreign Languages and Literatures, Department of Romance Languages and Literatures, or various language combinations. In contrast one sees the big tent approach of Department of Foreign Languages or Department of Modern and Classical Languages in small and medium-sized state schools and liberal arts institutions where many colleagues have teaching assignments in both language and literature. The second issue, peripheral to the current discussion, is more commonly found in everyday conversation with one’s neighbors and in the debates of school boards and the popular press, such as those that occurred during the state of New York’s language requirement discussions of 1997.⁴

Differences in hierarchy between faculty members who are mainly engaged in teaching and those mainly engaged in research or between those mainly in language and those mainly in literature may not adversely affect a development workshop where discussion of third-party soft-

ware is the topic. Instead, on this neutral terrain faculty members usually focus relatively easily on a publishing company's or absent author's pedagogy and content.⁵ A development workshop on technology is thus an excellent occasion to promote productive discussions of pedagogy and methodology among faculty members.

Sometimes, however, the language of discourse itself can cause difficulties in faculty members' evaluation of software and its possible applications to curricula. In her wise treatment of recent "shifts in disciplinary boundaries in the humanities" (23), Claire Kramsch observes:

Literature scholars, SLA researchers, and language teachers don't share the same discourse, because they don't occupy the same subject positions in the academic hierarchy [. . .]. If language teachers start using the discourse of SLA research, they may be reminded by the literature professoriat that their job is to teach conjugations and declensions, not to "foster the development of L2 interlanguage." And if literature scholars venture an opinion about language teaching, their opinion might be contested by second language acquisition researchers who adduce experimental data to support the pedagogic practices they advocate. (25)

Part of the problem Kramsch describes is a division between those who study "interpretation" and those who study "information," those who see content and analysis as opposed to skills: "Indeed, many would say that universities are supposed to help students discover, through example and emulation, the universal truths by which humankind may choose to live. Such discovery is a matter of analysis and interpretation, not a transferable skill." Kramsch notes that this latter view may now be considered invalid by some institutions, as may be the general assumption that reading would be the most likely skill called on to "develop critical thinking" (28). We might concur with her that the importance of student careers after college has put pressure on institutions to accept both approaches. Indeed, Kramsch makes the important suggestion that we each learn enough about one another's discourse and content (literary criticism, applied linguistics, pedagogy, SLA) so that we may better collaborate for our mutual professional benefit. Let us add that we might then question whether a communicative language-culture course should be taught as an information course even if there is a significant amount of vocabulary and a number of grammatical rules explicitly or implicitly contained therein. One would hope that a philosophy of language instruction and what John Sennigen calls the "investig[ation] of culture as a way of life" (21) would both be present, even at the earliest levels of language instruction.

If we follow the thinking of two recent writers in the *ADFL Bulletin*—Serafima Gettys and Bill VanPatten—there is an additional problem facing faculty members looking to the SLA researcher for assistance in applied research. According to Gettys, referring to work by SLA researcher Rod Ellis:

Without doubt, the relation between second language acquisition (SLA) and language pedagogy in the United States is quite problematic, since SLA has virtually declared its independence from language teaching. Thus, for example, in an article on the relationship between SLA and language pedagogy, Ellis concludes, "To avoid any misunderstanding of the arguments I have advanced [. . .] I want to stress that I see no obligation for SLA researchers to attend to pedagogic issues. Many SLA researchers [. . .] have no interest in pedagogy, the focus of their attention being on developing SLA theory for its own sake" (88). (34)

Gettys further comments that while discussing Kathleen Bardovi-Harlig and Beverly Hartford's recommendation to bring "together various experts in SLA, psycholinguists, pragmatics, and so on, to create a core of what prospective teachers should study, VanPatten predicts (with a somewhat somber note) that such a major change in teacher education will hardly take place in the near future" (35). Perhaps Kramsch's suggestion, if acted on, could break the deadlock indicated by Gettys and VanPatten. Misgivings similar to Kramsch's have also been expressed by Jean-Jacques Thomas. We might establish a professional dialogue on graduate student preparation and faculty development in related fields, possibly using technology as the neutral playing field for part of such an exploration. One sees such possibilities in the breadth of interest pivoting around technology in the various conference programs and mixed panels for IALL (International Association for Language Learning Technology) and CALICO (the Computer-Assisted Language Instruction Consortium), for example. New FLAC (foreign language across the curriculum) projects such as my own institution's International Studies / Language Technology Initiative (ISLT), funded by the Rockefeller Brothers Fund, also testify to productive collaboration of faculty members across diverse disciplines. In our case, these include Modern Languages and Literatures, International Studies-International Business, Sociology-Anthropology, History, Politics, International Finance, and others (see *International Studies*).

I recommend that a suitable testing ground for interrelated SLA, methodological, and literary interests of faculty members be explored in the language resource center or similar facility (computerized classroom, teaching and learning center, etc.), where students' learning and learning habits can probably be more easily and comfortably observed and recorded than in a standard classroom. And temporarily, with few or no teaching responsibilities during students' study time, the classroom instructor can take part in the research, further interweaving important strands of our profession, as Kramsch has suggested. Some type of conscious planning for action research and this interdisciplinary sharing is necessary, for relying on chance will continue to bring only ad hoc results, in contrast to what is happening with the integrated approach of the public school sector. With our greater freedom of choice, we must choose to work in concert. Our students,

majors included, do not usually arrive with the straight As that Gettys refers to in the Russian system for foreign language university specialties (33–34), and our post-secondary institutions vary widely in their size and types of departments. We surely want to coordinate and provide all supportable pedagogical and technological resources in addition to our own teaching to meet our professional goals and students' needs.

Computer-Assisted Language Learning (CALL): A New Terrain for Pedagogical Synergy in Faculty Development

New computer-based exercises and products exist that allow us to integrate various sensory (audio, video, haptics) and information types while pursuing proficiency goals with embedded, relevant cultural content. In fact, we find activities involving role-playing, morphology, applied vocabulary building, and many other areas in language-learning software that is often used at the intermediate or advanced level: Frommer et al., *Dialogues*; Bush et al., *Montevideo*; the LanguageNow series; and Furstenberg, *A la rencontre de Philippe*, among others. The navigational and help functions in such programs can be quite rich, as one can observe in the screen display of *Philippe* and several other programs mentioned below and reproduced in useful photos by Ana Beatriz Chiquito, Carla Meskill, and Joy Renjilian-Burgy (52–67).

Reflecting on how far we have come, we remember the cartoonish Apple computer screens of the 1980s with their pink-and-green text and IBM compatibles with their choice of white, green, or amber pixels. These options have blossomed into nearly print-quality, true-color images on energy-efficient displays as large as those of many television sets. The beeping drill and practice exercises, which sometimes declared students' answers to be "wrong" or worse, have given way to kinder, gradated feedback for listening and viewing exercises with full-motion video and stereo sound. We now see practice materials that, although far better integrated and more complex, are relatively easily navigated in the products mentioned above and in those more suited for earlier learners, such as the Rosetta Stone and *Traveltur*.

Practicing teachers and software reviewers seem to be playing a somewhat greater role in the creation of recent products for CALL, more of which now offer useful activities, anticipated wrong-answer feedback, hints, and online help. One series with over a dozen languages, Rosetta Stone, contains assessment tools for conducting research more easily than the others: (1) criteria-based learning levels set by instructors or their software-savvy colleagues in the language laboratory; (2) a consistent scoring function for each student; (3) managerial software for establishing groups or classes of students; and (4) a logging function to track and print out learners' progress.⁶ The criteria-based learning function is particularly intriguing

in that students may be required to perform at or above a particular level set by instructors before being allowed to advance to the next lesson. The order of lessons in this product can be rearranged to suit course needs. Students can practice the following skills: listening comprehension; pronunciation that is judged by speech recognition algorithms; spelling; dictation; and vocabulary recognition, where individual words, collocations, or sentences must be matched to digitized sketches, photographs, video clips, or audio clips. A timing function is also available. Instructors can also choose which media combinations their students should practice. Optional printed workbooks and study guide materials provide further classroom and homework possibilities. To implement this product, faculty members would probably be working closely with the staff of the language resource center, thereby also strengthening the collegial infrastructure.

Another series, Transparent Language's LanguageNow (*FrenchNow*, etc.), with both traditional literary titles and popular culture selections, has proved useful for language and literature teachers in bridging language acquisition and literature courses, even as early as the intermediate level. Its *Educator's Toolkit* and customizable notes section give the instructor or language lab director the ability to lock out certain commentary or translation windows and to annotate the text further, even on a word-by-word basis. Easily modifiable text font and point size as well as rapid search options by word and morphological category permit new and impressive pedagogical options in classroom teaching and assignments. Partly because of these features, illustrations, video clips, and a variety of products whose usefulness spans most language-learning levels, LanguageNow boasts an impressive number of registered users: 825,000 according to Michael Quinlan, the company's president, with an estimated 2 million overall users. (Only 10,000 of the registered users are educational institutions.) This product merits further research, as does a title for the Macintosh, Gilberte Furstenberg's CD-ROM, *Dans un quartier de Paris*, which contains annotated video interviews with the inhabitants of the Marais section of Paris. Many sociocultural themes are explored, reminding one of the interactive videodiscs by Judith Frommer and her collaborators in *Dialogues*; Furstenberg's *A la rencontre de Philippe*; and Ellen Crocker and Kurt Fendt's *Berliner Sehen*, a work-in-progress using newer technologies at MIT. In all of these products or research projects, cultural studies and language teaching are inextricably mixed and linked.

Publications whose authors may reflect Kramsch's wishes for combined areas of expertise are likely to continue along the lines of the handbook found in Tim Boswood's *New Ways of Using Computers in Teaching* and applied research volumes such as Michael Bush and Richard Terry's *Technology-Enhanced Language Learning*. These teacher-oriented volumes should be accessible to many in our profession. The teacher tips of Boswood's compilation

along with Bush and Terry's pictorially documented publication from the American Council on the Teaching of Foreign Languages (ACTFL) provide in themselves a useful review of CALL activities and materials. Some multimedia developers and adopters have even found that "multimedia interfaces, especially those typically found in task-oriented lessons, provide a level of control that reduces anxiety and provides flexibility and efficiency in the playback of media and in the pacing of activities" (Pusack and Otto 9). This view is also supported by Margaret Beauvois for computer-aided writing in her study "Computer-Mediated Communication (CMC): Technology for Improving Speaking and Writing."⁷ Two other articles, Chiquito, Meskill, and Renjilian-Burgy's "Multiple, Mixed Malleable Media" and Peter Lafford and Barbara Lafford's "Learning Language and Culture with Internet Technologies" review useful, commercially released CALL products and World Wide Web sites, respectively. They also include a number of academically sponsored Web sites offering online language-learning exercises, some with audio and video materials.⁸ Elizabeth Joiner's circumspect discussion, "Teaching Listening: How Technology Can Help," considers products, proficiency guidelines, and learners' possible speech and hearing constraints in order to make appropriate recommendations on technological and pedagogical choices for their effective language learning.

Quality of Web Materials

We are developing a new awareness and set of expectations regarding technology-based materials in prepackaged form and on the World Wide Web.⁹ Secondary school frameworks now often implicate these types of materials for language learning and require articulation at the post-secondary level in licensure programs. Scholarly research is starting slowly to bear fruit in correlating research to classroom practice (e.g., see Gonglewski). Faculty members notice a greater need to familiarize themselves with a bewildering new canon on the Web, one that can change daily. Administrative, student, and peer pressures exist for faculty members to select and accommodate Web-based materials, whether as an incentive to increase enrollment in a course or to heighten an existing course's currency (such as for civilization, conversation, or translation) or as a component of distance learning.

The caveat emptor that consumers now find in the giant flea market or, at best, the bazaar that the Web has become has strengthened an educational mission our departments have always taken to heart. We should surely point out in public forums the importance of our mission to prepare students for more critical evaluation of assertions and ideas such as the authenticity and authority of sources within and beyond the confines of the library's shelves. In "The Web Demands Critical Reading by Students," Ruth Dickstein and Kari Boyd McBride write:

But the Web pages provided by faculty members and librarians cannot, by themselves, make our students critical readers, thinkers, or writers [. . .]. So the first step for academics is to teach students how to find information from *all* sources, whether in print or on line. The second step is to teach students how to read that material critically, even suspiciously. (B6)

Trends in the Adoption of CALL Materials

Despite the good efforts invested in evaluating suitable hardware and software choices for language learning, we still learn from Bush's "Implementing Technology for Language Learning" that public school "students spent 2.7 percent of their computer time studying foreign languages, the lowest of all the percentages for the other subjects shown in the table" (288). According to the Rand Corporation study he used (Glennan and Melmed), students devoted 31.2% of their school computer time to typical academic subjects versus 45.5% for computer education, 17.3% for vocational and 7.3% for recreation or other purposes (289). Foreign languages thus ranked just below fine arts (3% of computer time) and as a discipline was almost three times lower than mathematics (7.7%).

One might wonder if we are still plagued by inadequate CALL materials, which would explain their infrequent use by faculty members. I do not believe so. For example, in considering use of electronic media by language and literature faculty members, show-of-hands polls I conducted in technology-related sessions at four Modern Language Association conventions, in 1993 and between 1995 and 1997, revealed that fewer than 5% initially (in 1993) but ultimately about 25% of the foreign language faculty members in attendance (in 1997) had used CALL in their own curricula.¹⁰ Furthermore, the percentage of all faculty members who had used e-mail rose dramatically among these audiences: from about 20% in 1993 to over 90% when I last conducted such a poll in 1997. Between 50 and 200 people attended each session polled. Figures supplied by the MLA show the following growth in its membership's listing of e-mail addresses, relative to a membership total of approximately 31,000 in recent years:

1993 — 2,557 (est.)	1996 — 13,861
1994 — 5,604	1997 — 16,000 (est.)
1995 — 11,062	2000 — 24,927 ¹¹

E-mail address listings have increased almost tenfold in the past eight years and by a factor of six between 1993 and 1997, inclusive. In my audience they increased almost fivefold. These increases, based almost exclusively on figures for the postsecondary level of our profession, are similar to the increases in the use of CALL as described above. In the year 2000, e-mail address listings in the PMLA are printed for about 80% of the entire membership. It would be interesting to know if the use of CALL has risen to ten times the rate of my poll in 1993, thus to 50%.

Workshop experience suggests that many CALL products for the novice and intermediate levels succeed in both secondary schools and colleges. Publishers are shrink-wrapping software with college textbooks and advertising the CALL materials outside academe. As opposed to six years ago when close to none of our university's students had ever been exposed to CALL materials, 16% of the 256 students (i.e., 41 students) returning a questionnaire of the 1,056 distributed in May 1998 replied that they were using CALL software not belonging to the university, presumably software they owned. Similarly, in show-of-hands surveys I have conducted every year in my intermediate-level French classes, under 20% have indicated that they used CALL materials before college study. This figure appears to confirm Bush's research. One might wonder in what way and in which types of secondary schools CALL is penetrating the language curricula. The municipal and state foreign language frameworks I have read, reinforced by workshop experiences, suggest a more dramatic increase in CALL penetration since 1996. New research into CALL use in the secondary schools and points of articulation with postsecondary institutions should now be undertaken.

The above statistics and the awareness of products we read about in current literature or see in state, regional, national, and international foreign language conferences seem to support the impression that CALL materials have both improved and been more widely distributed to postsecondary institutions and individual language learners. Software that accompanies textbooks is likely to be recyclable in other curricula, provided that it is available to nonadopters of the print materials. Buttressing the assumption of wider CALL use is proficiency-oriented research like the studies cited above and the increasing number of language professionals familiar with the same, well-recognized rubrics, procedures, and guidelines for assessing understanding (reading, listening, kinesics, cultural signs) and performance (speaking, listening, kinesics).

Textbooks seem to be acquiring an increasing similarity in communicative strategies, vocabulary choices, treatment of grammar, and overall relevance of content materials to students. The result of this convergence of materials and approaches may be a good one for teachers and students. Besides the improved pedagogy in traditional teaching media, software, the new medium on the block, is also likely to transfer across textbooks and even generational boundaries. Indeed, our language resource center has found that most of the titles cited earlier motivate and enhance language learning for a variety of users, both traditional and nontraditional. Some learners using the same software materials (Rosetta Stone, Smart Start, and Tell Me More, for example) may be as young as six and others as mature as eighty: boys and girls, grandfathers and grandmothers, college-age students and professors. Perhaps any residual hesitancy in adoption of CALL by faculty members originates in a need for ap-

propriate development, technical support, and budgetary commitment.

Part of the development experience for faculty members should include discussion of at least six factors for assuring successful student use of CALL materials. Observations culled from research by Pusack and Otto, Beauvois, and others in the volume edited by Bush and Terry; from Burnett and Lyman-Hager; and from personal experience point to the following needs:

1. A staff or faculty member adopter familiar with particular software or technologies
2. Content type (if age-specific, etc.) and material appropriate to the learner
3. Appropriate navigational requirements (understandable interface and usable control media, such as keyboard, trackball, mouse, touchpad, writing tablet, stylus, joystick, touchscreen, lightpen, voice recognition, etc.)
4. Reliable technology (thus overall support)
5. Accessible appropriate technology (software and hardware) for students
6. Content and learning processes that are relevant to the course syllabus and grading (evaluation of student performance); for example, are CALL materials specifically correlated and assigned to course goals in instructors' syllabi? My research on development opportunities suggests that unless faculty members receive training in the use of these materials and correlate them with their textbooks or syllabi, the CALL software will usually lie dormant. Faculty members' familiarity with the national foreign language standards can often serve as a foundation and framework for making this correlation.

With the creation of software titles being partially driven by the general consumer market, nonacademic product reviews have been appearing for at least a decade in major newspapers and popular technology trade magazines. These sources combined with education periodicals have helped inform the public about trends in teaching and learning languages. A variety of specialized publications supply a wealth of bibliographical references, research articles, and courseware reviews to give us a sense of the confluence of language-literature pedagogy and technology: *CALICO Journal*, *IALL Journal*, and edited works like Bush and Terry's, to name just a few. Periodicals that appeal to language professionals exhibit similar trends, including the occasional special technology issues (e.g., *Foreign Language Annals*). Broader interest in technology and the humanities, particularly computer-assisted research in language and literature, is evident in journals like *Computers and the Humanities* and the Web site of the Association for Literary and Linguistic Computing (ALLC).

Departmental chairs and other supervisors of language and literature programs will want to explore options for professional development where a match exists between technologically assisted instruction or research and a fac-

ulty member's specialty areas. Language and literature faculty members in general will want advice on the best software and research to help them choose the titles most appropriate to improving students' learning. Despite improvements in installation procedures, all computer-based products are more complicated to access than a book. Departmental obligations and satisfaction with existing courses will generally work against instructors' adding CALL or even more traditional technologies, such as videotape and videodisc, unless there is a pressing need for change: the need to add new authentic materials, to provide instant feedback for homework assignments, to solve a particular problem in the display of information through the use of electronic media, and so on. These materials and technologies may enable us to provide greater interactivity for students studying outside class and to enhance classroom-based learning through better control of audio, video, and textual materials. But certain caveats bear mentioning in this period of positive reflection on technology at the beginning of the century.

Distance Learning and Development of Materials

The demonstration of faculty and administrative support described above is absolutely vital in the case of distance learning, which is a major drain on the time of faculty members and the technical staff.¹² Discussing in depth the costs and trends of distance learning (DL) for modern languages and literatures would require substantial space not available here. For the present, let me observe that various modalities and support issues require attention: the World Wide Web, television production, course preparation, decisions on synchronous (real-time) versus asynchronous (delayed) modes of instruction, additional instructor involvement, intellectual property deliberations, and end-user needs. With concern over potential competition, many institutions either are developing new divisions to handle these matters or are in essence outsourcing projects to commercial firms or to types of consortia.¹³ Judith Boettcher, executive director of the Corporation for Research and Educational Networking (CREEN), has stated that "to produce one hour of student learning" one hundred hours of "academic effort" are required to create appropriate materials on broadcast television, two hundred hours for computer-aided learning (CAL), and three hundred hours for interactive video (58). While faculty members and support staff can reduce these hours in the long term once course templates and other structures for software creation are added, this approach still front loads many hours into each team members' learning curve and development time.

An experiment I conducted with a CALL template, a highly structured tool with only a few dozen pedagogical options and no multimedia, required approximately thirty-five hours to create the first hour of instructional material. Following this stage I required approximately

five to ten hours for each one-hour lesson, including lesson objectives, data entry, testing of the lesson's functionality, proofreading and correction of typographical and other errors.¹⁴ The time necessary to create a lesson is likely to increase three- to tenfold with the addition of audio, video, and graphics items, such as on the Web. Faculty members who have evaluated existing software and made the appropriate pedagogical decisions on goals, contents, and lesson design will likely experience a decrease in the total time needed to create and implement their materials as they become more familiar with them. But they will also find that creating digital materials, installing and testing one's software, and arranging or conducting student orientation drain resources from their regular duties and from the institutions' computing divisions. Thus the advice and advocacy of a departmental liaison, humanities technology specialist, or instructional designer familiar with the needs of modern language and literature departments are crucial for planning and integrating the department's curricular needs within academic computing and the overall campus technological infrastructure. Here the collaboration and advocacy of departmental chairs and supervisors are also vital. Care must also be taken to advise and reward faculty appropriately on these technology-assisted efforts. See, for example, the statements by the MLA Committee on Computers and Emerging Technologies and Research (*MLA Committee*).

More and more institutions are becoming aware of the careful planning and complexity necessary to good distance learning, to summarize a recent report by the American Federation of Teachers, and the resources being expended seem to be increasing. Departments may cast an ever-warier eye toward the continuing education division within their own institution if it operates independently from their purview, for institutions are being offered a variety of services for creating distance-learning courses. We see the names of these companies on the television news, in weekly advertisements published in the *Chronicle of Higher Education*, and in other nationally circulated periodicals and newspapers. The National Association of State Universities and Land-Grant Colleges recently conducted a rather broad survey of the costs to institutions for DL, and this work shows that the presence of various DL materials for our profession is becoming more evident.¹⁵ Furthermore, the technology models of cost control may now be more convincing.

According to Charles Karelis, a former director of the Fund for the Improvement of Postsecondary Education (FIPSE), four significant models of cost control for distance learning exist. In his third model, public funds are used "to raise the practical upper limit of enrollments or users of the capital-intensive materials," by creating video materials, Web pages, networking infrastructures, program code, and the like. Essentially, this model saves money by creating consortia and allowing larger groups of students to enroll, thus achieving economy of scale.

However, the “traditional cultural barrier” (26) among institutions must be eliminated.

We are already seeing successful distance learning across the country, including densely populated areas where traditional rivalries have existed and have apparently been reconciled for the common good. The May 1999 conference “Network-Based Education and Training Challenges for Higher Education in New England” revealed significant changes in the University of Massachusetts (e.g., the Cyber Ed program between the university’s campuses at Lowell and Dartmouth) as well as in six land-grant institutions sponsoring graduate ecosystem-health seminars. Karelis notes the FIPSE project involving the “American Council of Teachers of Russian, who are partnering across campuses to develop online materials for teaching business Russian. This product will be used by a larger group of students than now exists at any one of the participating campuses.” He goes on to mention “course sharing consortia among the Concordia group of colleges, and between Lynchburg, Sweetbriar, and Hampden-Sydney Colleges,” a project that promises to yield a wealth of materials (26). However, a report in the *Chronicle of Higher Education* on a Mellon grant’s praiseworthy attempts to create consortia among liberal arts colleges shows that all is not sweetness and light and that some institutions involved in Project 2001, according to its director, Clara Yu, “really hate each other” (qtd. in Young, “Moving” A34). Some of these institutions are not likely to collaborate easily on DL and other technology-related projects in the near future. Perhaps successful DL collaboration requires greater geographical distance or less competitive student recruiting among institutions, conditions that we may be more likely to find in the public sector, which is where Karelis focuses his attention.

Karelis provides three different versions of his fourth model, “Lower the Marginal Cost of Labor-Intensive Teaching” (26). In the first version, more funds are spent “initially on developing the Internet-delivered course than for a regular classroom course, in order to spend somewhat less staffing the course—without loss of instructional quality and without overly large classes” (27). This version requires highly structured lessons, interactive exercises, training materials for the facilitators or coinstructors, and class packs for the students. The model could provide professional development and employment opportunities for more graduate students and part-time faculty members. But imagine the amount of organizational work necessary to carry out such a project. How many language and literature professors are prepared for the venture? At least a temporary career change may be required, although the new work elements might afford new development opportunities for tenured faculty members. These assignments might in turn open up positions for new faculty members in the traditional curriculum. Alternatively, colleges and universities will partner with commercial firms that might otherwise recruit or siphon

off campus-based talent. We will be seeing more advertisements like eCollege.com’s, which reads, in part: “The eTeaching Institute, a community dedicated to the professional development of online education, now offers eFaculty eXchange. The eXchange provides online training certification and connects you with universities seeking education in your field.”

For junior faculty members, partnership with a commercial firm may be preferable to being engaged in projects that count little if at all toward salary increases, promotion, and tenure.¹⁶ But similarly, senior faculty members should also note that hourly salaries may range as low as one to thirty dollars when all is said and done, depending on how much planning is needed, how much contact faculty members have with their DL students, and how many technical issues must be surmounted.¹⁷

Mediation by the upper administration may also be necessary as humanities departments start asking for increased support from the technical staff. Sudden increases in the use of bandwidth and other network resources by devices such as full-motion video servers for distributing digitized lessons of Spanish news broadcasts to hundreds of intermediate students may otherwise take innocent campus e-mail users by surprise as their textual displays slow to a crawl. Planning thus becomes vital for reasonable use of the campus network and technical support and for the upgrading or replacement of computers and software in classrooms, language labs, offices, and dormitories. New lines of communication must often be drawn among language-literature faculty members, chairs, their deans, directors of library media, campus media, and academic computing services.¹⁸ Besides developing helpful departmental liaisons and outside consulting contacts, the importance of befriending overworked help-desk staff members and field technicians should not be underestimated.

Recommendations for New Professional Training

If there is a growing clamor for development opportunities for faculty members who want to use technology, it is probably due to their absence in these teachers’ earlier undergraduate and graduate educations, as we might interpret from Phyllis Franklin’s 1999 editorial, “An Urgent Request to Rethink Teacher Preparation.” In anticipating the requests of college presidents, the executive director of the MLA reasonably asks us “to pay particular attention to content, the subject matter we include in the courses we teach and in the programs we configure for undergraduates preparing to become high school teachers in the field who enroll in graduate courses and programs” (4). This content may arguably require technology-based products and methodologies for using them appropriately. And Solveig Olsen made a logical, informed case the previous year for graduate students to

have a pedagogical dossier and “training in the pertinent use of technology” (503). In 1997, Margaret Ann Kassen and Christopher J. Higgins were also on target. After citing President Bill Clinton’s call for classrooms “connected to the information superhighway with computers and good software and well-trained teachers” (263), they state, “While opportunities for technology training are flourishing, a survey conducted by the U.S. Department of Education found that in 1993–1994, only 14 percent of teachers had more than eight hours of such training. More than 50 percent had little or no preparation for using technology in the classroom (US DOE 1995)” (264). In my experience I have found that methodology instruction for future public school teachers has differed significantly from that provided by graduate schools for future professors of language and literature. Yet some of the products and many teaching techniques at the novice and intermediate level of language and culture instruction are likely to be just as valid in both sectors. Reactions by hundreds of K–12 teachers and professors sitting side-by-side in workshops support this assumption. Because of the proficiency movement and the mobility of materials with what I will call *active pedagogies*, we have more and more in common.

Our graduate programs apparently also have their work cut out for them in terms of integrating appropriate technologies in their curricula. Frumkes and Garrett assert, “Training in teaching with technology is far more complex and time consuming than training in using text analysis tools in research, and very few departments have faculty who can do this kind of teaching; in very few teaching methods courses around the country is there any significant component of technology training” (157). And the results of a recent study by Chris Golde and Timothy Dore of 4,114 doctoral candidates at twenty-seven institutions strongly suggest that their training is not adequately preparing them for teaching in the institutions where they will obtain positions (24–27). Only 14.1% of these students responded that they were prepared by their program for incorporating information technology in the classroom, and 33.5% indicated that they were comfortable with the technology (27). We should note that seven to eight of the disciplines surveyed are in the social or natural sciences. Unfortunately, this Pew study included no foreign language students, although doctoral candidates of English were surveyed.

For effective use of technology in the classroom, future teachers should be using appropriate, high-quality software throughout their own undergraduate and graduate educations. Faculty members who are teaching methods courses should be adding sound techniques for teaching with these products in the classroom. To assist in this development, the profession might offer more train-the-trainer opportunities, creating an infrastructure that will disseminate and replicate the valuable work of our National Foreign Language Resource Centers (NFLRC) and

development projects for faculty members such as the one described by Young at Middlebury. Appropriate materials might include videos, online methodology modules for faculty members, and CD-ROMs complemented by mentors from the faculty who could provide live (in-person) or televised demonstrations and lead discussions for both language-literature departments and teacher-training programs or schools of education. Teleconferences that might serve as prototypes for such seminars have already been organized by publishing companies (e.g., Heinle and Heinle; McGraw-Hill, “Integrating” and “Role”). A complementary opportunity for ongoing discussions would be needed in many institutions to ensure that the major administrative and technical players worked with language and literature departments.

Faculty members’ need to research, evaluate, archive, and display at least some of the cultural and literary materials whose digital accessibility enriches their classes will continue to grow. Hundreds, perhaps thousands of useful online exercises and other foreign language Web pages for courses already exist. Online authentic materials will flow as a never-ending spring of potential classroom and textbook resources. Distance-learning courses will slowly multiply. Eventually, the gap between faculty members’ ability to exploit these materials and students’ or their parents’ familiarity with similar, even the same, resources may become too glaring to ignore. Parents, students, and administrators will expect sophistication in our profession as our admissions offices are already discovering in online queries. Given society’s often unpredictable adoption, refusal, or abandonment of certain technologies, our profession needs a new kind of adviser-teacher whose practical knowledge bridges the worlds of technology, language, literature, and pedagogy.

The time has come to move toward a certain amount of consolidation (or at least collaboration) in professional training. Just as schools of education and graduate schools for language and literature possess a canon for their general and specialized areas, they might also establish common courses where faculty members interweave their sound principles of pedagogy, language, and literature content and appropriate technological tools. However, although teachers master the canons for their various disciplines, they do not usually do so when dealing with technology-based matériel and materials. Courses or a course sequence coordinating language pedagogy and technology in all language and literature graduate programs would serve students well in several ways: by developing teaching skills, by alleviating technology angst by providing greater familiarity with hardware and software, and by developing connections among certain disciplines (pedagogy, applied linguistics, the teaching of language and literature, educational technology, etc.). A web of technological resources integrated into many language and literature courses could serve as a complement to or substitute for specific technology courses. For instance,

career placement experience in my own institution suggests that undergraduates with interdisciplinary and technological experience in our ISLT grant project are strong candidates for graduate school fellowships, teaching positions, internships, and other interesting jobs involving technology, foreign languages, and analytical thinking.

We seem to have arrived at an auspicious juncture for using technology-dependent materials to improve our students' performance and to offer them transferable technological skills that enhance their career options. The call for interdisciplinary faculty members who are familiar with areas that complement their specialty, as noted by Kramsch, fits well within this framework and, I believe, is useful to the successful integration of computer-based materials and activities into language and literature curricula. However, technology rarely exists for its own sake in the humanities; content and research must be judged on their own merits. At the same time, the knowledge base and artifacts that we create as scholars are likely to be less and less traditional. After all, the book complemented and supplemented oral tradition as film later did the play, neither being supplanted by the other.

New and emerging technologies are enabling us to create innovative ways of expressing our thoughts, research, teaching, and interactions across disciplines. As Julie Thompson Klein has pointed out, "interdisciplinary activities should be judged, then, on how well they accomplish the particularities of their tasks and how well they integrate knowledge" (211). Thus, appropriate interdisciplinarity as described above; interweaving of technology into the curriculum; and increased communication among our departments, administrators, and technical experts are vital to the success of our missions in language and literature. And only by being aware of our curricular options, including new materials, new methods, and new types of viable scholarly specialties, can we make informed decisions on the best ways to teach and research, to develop professionally, and to form new collaborative frameworks for using technology.

Notes

¹Technology now provides video- and computer-simulated modes for eliciting ratable oral proficiency samples to be evaluated by a tester.

²LLTI is an e-mail discussion group founded in 1990 by Otmar Foelsche, Kurt Fendt, and Joel Goldfield and moderated by Otmar Foelsche at Dartmouth College. LLTI principally serves language-laboratory staff and faculty members in technology for language learning.

³Over the past decade, occasional summer seminars have provided useful development opportunities for faculty members, technical staff, and library professionals. These include several on digital imaging, computer-assisted textual analysis, and text encoding (TEI, SGML) at Princeton University and elsewhere; others have focused on computer-assisted language learning tools, second language ac-

quisition, and methodological components, such as at the nine National Foreign Language Resource Centers (also known by similar names) and at Middlebury College. See, for example, *National Language Resource Center* and *Center for Language Education* for information on the University of San Diego's NFLRC and Michigan State University's CLEAR program. Both of these programs have extensive internal and external development programs for faculty members. As examples of the few graduate programs preparing advanced students in areas immediately related to foreign language research and teaching with technology, see *Doctor of Arts in Foreign Languages* and *CALL Graduate Program*.

⁴See, for example, Kassouf. This letter to the editor was printed with five other letters on the same subject. See also Sengupta.

⁵On the value of establishing a neutral terrain for language pedagogy discussions, see Goldfield, "Terrain."

⁶Another independently standing program that carries a similarly sophisticated management system but that has more reliable speech recognition is Tell Me More, a series in American, British English, Dutch, French, German, Italian, or Spanish. Also see www.auralog.fr.

⁷A worthwhile follow-up to lowering language learning anxiety is Beauvois, "Computer-Mediated Communication: Reducing Anxiety and Building Community."

⁸Also see the foreign language and literature pedagogy resources at *FLTEACH: Foreign Language Teaching Forum*, which includes a discussion list; *Tennessee Bob's Famous French Links*; Van Handle (for German); *Camssoft*, Graham Davies's Web site; and *Agora Language Marketplace*.

⁹See, for example, Lafford and Lafford; see also Cohn et al., and Moehle-Vieregge et al. This last publication and its counterparts for German and Spanish provide Web sites that include many activities, but care must be taken to verify the availability of each address before it is used in assignments and classroom activities.

¹⁰"Textual Research in the Electronic Age," Modern Language Association Convention, Toronto, 1993; "Internet 101: Resources for Research, Communication, and Teaching," Chicago, 1995; "Internet 102: Archives and Databases for Teaching and Research," Washington, 1996; "A Holistic Integration of Technology into Language, Culture, and Literature Curricula," on the panel "Revolution or Evolution? Electronic Resources in the Humanities," Toronto, 1997.

¹¹The 1993 figure is an estimate based on several pages of the 1993 *PMLA Directory*. The 1994–2000 figures were supplied by Elizabeth Welles, director of ADFL.

¹²See, for example, Guernsey and Young; Selingo; Blumenstyk, "Colleges Warned"; Jaschik; and Young, "Survey."

¹³See, for example, Blumenstyk, "The Marketing Intensifies." Also see information on the Goethe Institute's *GOLDEN* project for interactive online teacher development (*AATG Newsletter* and at gtd.unl.edu/writing/index.html).

¹⁴The software template, created by Donna Mydlarski and Dana Paramskas, is *PROMPT*. Also see my review, "PROMPT."

¹⁵The reader might want to compare this report with the summaries in Russell. Related specifically to foreign languages, see also Despain.

¹⁶For a stunningly useful report on types of intellectual work and their relevance to hiring, promotion, and tenure, see the report by the MLA Commission on Professional Service.

¹⁷These figures are based in part on distance-learning projects described at CALICO 2000 and at the University of Arizona, Tucson (Fischer). Other salary references were given in the conference, From Distance to Desktop Learning, New England Board of

Higher Education, at the Bell Atlantic Learning Center, Marlboro, Massachusetts, 27 May 1998, notably LeBlanc and Weigle. Also see <<http://www.nebhe.org/>>. For information on a promising development project for faculty members that involves technology, see Fechter and Smitheram.

¹⁸See, in particular, Guernsey, who reports on development work done by Steven Gilbert on the teaching, learning, and technology roundtable (TLTR), affiliated with the American Association for Higher Education and its complementary e-mail list, "AAHESGIT," which helps faculty members, staff, and administrators "think about how to use information technology to better serve students" (A36).

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Elsewhere, Dr. Goldfield's chapter, "Technology Trends in Faculty Development, Preprofessional Training and the Support of Language and Literature Departments," appears in *Chairing the Foreign Language and Literature Department, Part 2*, a special issue of the *ADFL Bulletin* (Modern Language Association, Spring 2001). Work on stylometry or stylometrics, literary criticism and corpus stylistics has been the focus of Dr. Goldfield's long-term research projects since the late 1980s. His most recent contribution in this field is, "Understanding Tocqueville across Time and Languages through the HathiTrust Collection," presented at the annual convention of the American Comparative Literature Assoc., at Harvard University (2016).