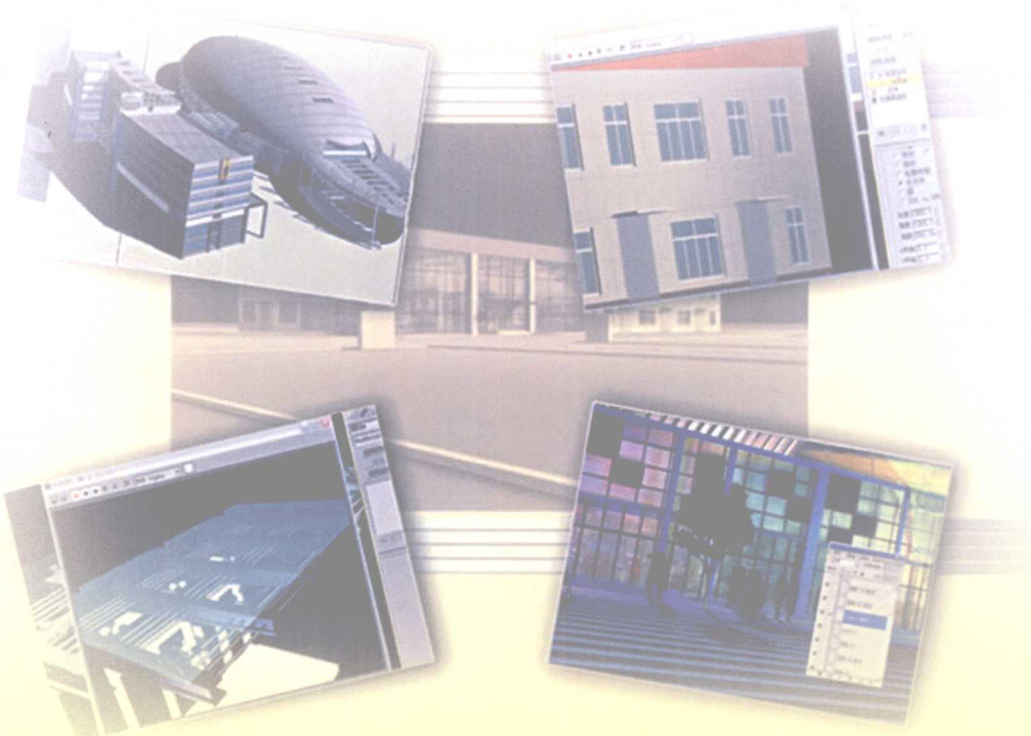
计算机辅助语言教学

Computer Assisted Language Learning

主编 水无砥



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前　言

计算机辅助语言学习是应用语言学的一个新兴的、正在迅速发展的分支。《计算机辅助语言教学》对计算机辅助语言学习进行了全面概述，并通过对具有代表性的计算机辅助外语教学研究案例的分析，显示出建立起计算机和外语有机结合的多媒体教学体系的必要性。

本教材主要包括计算机辅助语言教学概述、计算机辅助语言教学实证研究以及计算机辅助语言教学的评测等三个方面的内容，旨在通过上述内容向学生介绍这一领域的研究课题及现状，并为教师进行计算机辅助语言教学提供借鉴和帮助。

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Contents

Chapter One

Introduction to CALL

1.1 Definition of CALL

In 1983 at the TESOL Convention in Toronto, Canada, a relatively small group of technology enthusiasts met to discuss professional issues concerning the use of technology for language teaching and learning. Out of that meeting came a decision to refer to this area as "computer-assisted language learning," or CALL. In 1983 the issue of technology in second language learning (L2) or foreign language learning (FL) teaching was marginal at best to the profession of L2/FL teaching as a whole. In the years since the 1983 meeting, technology issues in L2/FL teaching have spread from the margins, and in the minds of some, are central to current theory and practice in L2/FL teaching. Even those who do not see technology as a central concern would probably agree that applied linguists need to recognize the ways in which technology affects their work.

As CALL has moved from the margins into the mainstream, the acronym that was agreed on by a small number of people in 1983 has been modified, contested, and discarded by some in what Rose calls "an ongoing power struggle among various factions to privilege their meanings and interpretations above those of others" (Rose, 2000). Whatever the political and intellectual shortcomings of the acronym in the ever -changing world of information and communication technologies, this acronym is used in institutions within the profession such as journals and professional organizations to denote the broad range of activities associated with technology and language learning. More important than the specific acronym used to denote this activity is the need to conceptualize and investigate technology-based pedagogy in a way that can inform practice.

Levy (1997) defined Computer-assisted language learning (CALL) as "the search for and study of applications on the computer in language teaching and learning", and it is now used routinely in a variety of instructional situations. As a

result, language teachers are increasingly required to possess CALL expertise that includes both practical skills and a thorough understanding of information technology (IT) theory. Teachers may need to design, implement, and evaluate CALL activities in their classrooms, they may be asked to supervise an institution-wide project or to work with other institutions to develop CALL-based exchange programs, or they may be put in charge of setting up and operating a multimedia language laboratory. It is thus becoming essential for teachers to be familiar with CALL options within the classroom, at the institutional level, and at the broader level of inter-institutional collaboration.

1.2 An Overview of Computer use in L2/FL Learning

Developed in the mid 1940s from earlier work in the 1930s and early 1940s, large mainframe computers were used during World War II for missile guidance and cryptography and were thus involved with language processes from the very start. Mechanical translations appeared in the 1940s as a spinoff from cryptography but proved to be inadequate; as a result, U. S. government funding for computer research initially decreased after the war (Last, 1992). However, because of the improved systems and programming languages that were developed throughout the 1950s, by the 1960s linguists were using computers to create concordances for text analysis. The first electronic corpus, the Brown Corpus of Standard American English was developed during this period. It consisted of about 1 million words, the minimum number required to provide a stable word-frequency list.

Until the invention of microcomputers, language learners had to work noninteractively with mainframe computers by punching their data on cards, running the program, then waiting for the results. Despite these limitations, simple CALL programs for drill and testing appeared as early as the 1950s, and a number of pioneer CALL projects existed by the 1960s. Early programs required the learner to choose one of two answers and the score was presented after the data had been processed. This linear type of program was the first generation of CALL software, and both researchers and educators acknowledged its limitations. The challenge was to create a learner interface that presented the computer as an interactive tutor evaluating the student and providing subsequent activities, a model characterizing CALL from its inception.

1.2.1 Structural CALL

This first phase of CALL has been termed structural CALL. It dominated the 1960s and 1970s and replicated the teaching techniques of structural linguistics and the audio-lingual method, a behaviorist model of language learning based on habit formation. Emulating techniques used in language laboratories at the time, CALL consisted mainly of drill-and-practice programs and was regarded as a supplement to classroom instruction rather than its replacement. However, it should be noted that even today numerous drill programs still exist for vocabulary study and grammar practice because repeated exposure to such material has been shown to promote its acquisition, and the computer provides both immediate feedback and presents material at the learner's pace, thereby encouraging learner autonomy.

1.2.2 Communicative CALL

By the end of the 1970s, however, behaviorist approaches to language learning were challenged by communicative approaches based on meaning-focused language use rather than formal instruction. The emergence of increasingly powerful microcomputers in the 1980s presented a greater range of possibilities for learner interaction, and pioneer books on CALL methodology, such as Higgins and Johns' influential Computers in Language Learning (1984), Underwood's seminal Linguistics, Computers and the Language Teacher (1984), and Ahmad, Greville, Rogers, and Sussex's Computers, Language Learning and Language Teaching (1985) began to appear. This period also witnessed the establishment of key professional organization such as the Computer Assisted Language Instruction Consortium (CALICO) in the United States and the European Association for Computer Assisted Language Learning (EuroCALL) in Europe, and publication of their journals, CALICO Journal and ReCALL. In addition, language teachers themselves began to write language-learning software using programs such as HyperCard, which were based on a nonlinear concept of interactivity-one of the key concepts driving the subsequent development of the Internet. This next generation of CALL software was characterized as communicative CALL because it emphasized communicative use of the language rather than mastery of isolated forms. Programs consisted of language games, reading and writing practice, text reconstruction, cloze tests, and puzzles. However, once again the prevailing model was the computer as tutor for the student, a "teacher in the machine", and some researchers evaluating CALL questioned whether this technology was truly compatible with communicative methodology. In reaction to criticisms that CALL was limited to mechanistic drills and lacked the ability to give learners essential

feedback, the early 1990s was characterized by a different model, the computer as stimulus. Here, software followed a cognitive model of language learning that aimed to stimulate students' motivation, critical thinking, creativity, and analytical skills rather than merely the achievement of a correct answer or the passive comprehension of meaning. A related learning model was the use of the computer as a tool providing the means for students to become active learners. Software in this category, such as word processors, spelling and grammar checkers, desktop publishing programs, and concordancers, did not supply language -learning activities but facilitated the students' understanding and manipulation of the target language.

1.2.3 Integrative CALL

The present stage of CALL, integrative CALL, arose in the mid 1990s and has been made possible by the development of powerful desktop computers that support rapid use of the Internet, local area networks (LANs), multimedia, and linked resources known as hypermedia. Currently, a typical multimedia language program might allow students to do a reading assignment in the target language, use a dictionary, study grammar and pronunciation related to the reading, perhaps access support materials and translations in the students' first language (L1), view a movie of the reading, and take a comprehension test on the reading content, receiving immediate feedback, all within the same program. This is a highly interactive and individualized approach, with the main focus on content supported by modules instructing learners on specific skills.

Much of the theory underlying integrative CALL is derived from the Vygotskyan sociocultural model of language learning in which interaction is regarded as essential for the creation of meaning. Thus, person -to -person interaction is a conspicuous feature of many current CALL activities. The rise of LANs to teach writing interactively and e-mail exchange programs among students, classes, and institutions are examples of interactive language learning activities, as are multiplayer role -playing games and interactive online real -time learning situations such as MOOs (multipleuser-domain object oriented) and simulation games played by different users. The rise of the Internet has promoted the use of CALL for information retrieval, creating the concept of computer literacy, a term referring to the development of skills for data retrieval, critical interpretation, and participation in online discourse communities. Learner autonomy – the influential concept from general education suggesting that students learn better when they

discover things through their own efforts rather than when they receive knowledge passively through instruction–is an important goal of the current view of CALL.

A second feature of integrative CALL is the movement away from language–learning software and CD–ROMs to Web–based activities that allow learners flexible, self–paced access to information. Thus, both teachers and students increasingly view computers and CALL as means to an end – the end being authentic, Web–based communication for meaningful purpose – rather than merely as a tool for language learning.

Regarding the future of CALL and the direction of educational technology in general, the point has been made repeatedly that no one knew what a powerful communication tool the telephone would eventually become, how the car would transform transportation, or how important television would become as a global medium. In the same way, from our current vantage point at the start of the computer era, it is impossible to visualize the changes that will occur as a result of its future development. Some researchers caution against the destruction of human relationships and the fragmentation of human society as a result of computer–mediated communication (CMC) preempting face–to–face interaction, warning that "improved tools are still projecting an unimproved and thoroughly unrevolutionary agenda" (Brown, 1997). Other researchers (e. g., Ogden, 1995; Warschauer, 1999) predict that we are heading toward a world without borders, with the rise of knowledge brokers and information literates as the new aristocracy and power elite. However, still others caution that the expensive technology and infrastructure required for online activities tend to privilege the culture and educational pedagogies of the advanced nations, creating a hegemonic "digital divide" between technological haves and have–nots. However, Murray (2000) observed that the new communication technologies such as video conferencing and e–mail have not yet replaced the old forms such phone calls and letters, but rather complement them, so the direction of the relationship between language learning and technology is still unclear.

Nonetheless, most researchers agree that a major shift is taking place – a shift in the use of general technology and a shift in education away from the teacher–centered classroom toward a learner–centered system where the learner is in control of the lesson content and the learning process. CALL has historically been rooted in educational technology, and findings from the general field of education will continue to be influential in determining its future directions. The general

differences between educatio n in the pre –computer industrial society and education in the computer–based information society are summarized in Table 1.1. The most effective uses of CALL support this new model of education, and language teachers need to be able to respond by creating CALL–based activities for their particular instructional situation. A quote that has made the rounds of language teaching e–mail lists and online journals during the past several years states the situation clearly: "Technology will not replace teachers; teachers who use technology will replace those who don't! " Teachers must therefore find opportunities to gain CALL skills by taking courses in computer technology, teaching themselves, and using their colleagues and the World Wide Web as resources, this last option suggested to be especially significant in skills development.

TABLE 1.1

Education in the Pre–Computer Society

Versus Education in the Information Society a

	Education in the Pre-Computer Society	Education in the Information Society
School	Isolated from society	Integrated in society
	Information on school functioning is confidential	Information on school functioning is openly available
Teacher	Initiates and controls instruction styles and strategy preferences	Empowers students to find appropriate instruction for their particular learning
	Teacher-fronted instruction of the whole class	Teacher as facilitator guides the students' independent learning; students often work in groups or pairs or singly
	Evaluates students	Helps students evaluate their own progress
	Low emphasis on communication skills	High emphasis on communication skills
Student	Mostly passive learning	Actively in charge of own learning
	Learning mostly at school	Learning at school and outside of school
	Little teamwork	Much teamwork
	Answers questions from textbooks or teacher	Asks questions; learns to find answers to questions
	Low interest in learning	High interest in learning

Adapted from Pelgrum (2001, p. 164).

1.3 Effectiveness of CALL

An important question at this point concerns the effectiveness of CALL: Does its use really promote language learning and student development? A large number of books describing and evaluating CALL, summarizing research on CALL effectiveness, and presenting CALL-based activities shown to promote language learning have been published, including Boswood (1997), Chapelle (2001), Crystal (2001), Debski and Levy (1999), Egbert and Hanson-Smith (1999), Felix (1998 , 2002), Hanson-Smith (2000), Levy (1997), Warschauer and Kern (2000), and Warschauer, Shetzer, and Meloni (2000). These works strongly emphasize the significant role of CALL in developing linguistic proficiency and communicative competence in L2/FL learners as well as promoting increased levels of learner autonomy, motivation, satisfaction, and self-confidence. For example, mid-1990s summaries of CALL research noted positive results from its use, indicating that CALL permitted students to control the pace of their learning and their interaction with others, and encouraged them to become better writers because they had an authentic audience and a purpose for writing. The use of CALL and distance learning activities was found to create classroom discourse communities and encouraged shy students to participate more fully. Students also reported that CALL activities helped them develop their ideas and promoted learning from their classmates. In addition, developing expertise in using computers gave students feelings of pride and achievement and greatly encouraged their autonomy as learners. Thus, CALL has been shown to produce a number of favorable learning outcomes.

1.4 CALL Activities

CALL has been divided into seven general types of activity. One of the most important is writing. This includes word processing, text analysis, and desktop publishing, often combined with communication over a LAN. Though student use of spell checkers and grammar checkers is common in these types of activities, much more sophisticated and interactive approaches are also possible. Many L2/FL teachers, for example, now request their students to use computers to write essays then to e-mail each other what they have written or to post their essays on a LAN.

The students then discuss and correct each other's writing, engaging in meaningful discourse and creating knowledge through interaction.

student discussions with each other or with their teacher on LANs, MOOs (sites on the Internet where student do role-playing games and talk with each other), and real-time chat. These activities are particularly useful for foreign language teaching where students share the same L1 because they create the need to use the foreign language for authentic communication. Another CALL activity is use of multimedia. This includes courseware presented on CD-ROM or online for study of specific skills such as pronunciation or grammar, and integrated skills-based or communicative practice where hyperlinks allow students to access a range of supplementary material for learning support. Often teacher-created programs are course-specific and are designed to quiz students over material covered in class.

Other CALL activities involve the Internet, such as Web searches for information and student construction of home pages. Related to this is the field of information literacy, a concept similar to computer literacy and referring to the ability to obtain information from the Internet and process it selectively and critically. The tremendous amount of online resources means that teacher evaluation of Web sites and L2/FL learning materials has now become an important aspect of Internet-based activities.

An additional use of CALL is concordancing and referencing, or using a corpus to examine the range of usages for grammar and vocabulary items, and using online dictionaries for definitions and usage information.

Yet another significant use of CALL is distance learning. In the United States, United Kingdom, and Europe, many college professors now teach some or all of their courses online. Research on distance learning and courses with online components suggests that online students make the same gains as those achieved by students receiving a regular "brick-and-mortar" lecture. Although it began only recently, distance learning via the Internet has already developed into an important field, with a rapidly increasing number of publications on its implementation and evaluation. In fact, an article in the Chronicle of Higher Education (November 16, 2001) titled "The Deserted Library" suggests that U. S. college students are doing most of their research online as well. An additional aspect of distance learning is the teacher creation of Web pages to disseminate their lesson plans, course material, research papers, and other material. Many teachers now routinely take attendance online and post course outlines, specific activities, tests, drills, and so

on, on their home pages. Veteran teachers may recall when there was often a filing cabinet of time-tested activities, lessons, and tests in the teachers' office for instructors to browse through and copy. Now this "filing cabinet" has moved online to hundreds of sites, including listening laboratories, Test of English as a Second Language (TOEFL) practice, reading and writing activities and exercises, tests, holiday-related and other types of cultural activities, Web page design, and so forth. Again, teachers are required to be able to evaluate sites and online materials.

Another important use of CALL is test taking. There is extensive research on computer-assisted language testing (CALT), suggesting that computer-based tests, particularly those that respond to learners' choices by presenting subsequent items at varying levels of difficulty, are effective in building language skills because they provide immediate feedback and multimedia support by access to dictionaries, grammatical explanations, and audio and video material for study of test items. Because the TOEFL is now administered by computer, students routinely use CD-ROM TOEFL practice tests and other self tests. Furthermore, many teachers have developed their own tests, checked them for reliability and validity, and posted them on home pages for others to use, or have developed freeware for course-specific test creation.

Thus, CALL is now an integral part of L2/FL classrooms and is likely to assume increasing importance as technology improves. This book serves as a practical handbook for those who would like to develop an understanding of the wide range of issues, research, and applications of CALL to the 21st-century L2/FL classroom. In the near future it is likely that many L2/FL teachers will need to be prepared to: (a) use classroom CALL and perhaps put part or all of their courses online, (b) evaluate CALL materials and Web sites, (c) participate in institution-wide CALL projects as well as inter-institutional partnerships, and (d) use or administer multimedia language laboratories.

1.5 The role of technology

Applied linguists working in language teaching and research routinely draw on computer technology for a variety of purposes to the point that technology becomes integral to applied linguists' concerns such as communication and language learning. In a paper that problematizes the seeping of technology into the

mainstream language-related activity, Bruce and Hogan (1998) portray a world in which the technology is an invisible but integral aspect of language use, and therefore where knowledge of technology is assumed of anyone who wishes to participate. Their point is that language professionals need to recognize how technology is deployed strategically by the competent language user if they are to teach the language learner about and through technology. As Cummins (2000) put it, "we should acknowledge the fundamental changes that IT is bringing to our societies and seek ways to use its power for transformative purposes".

What are the fundamental changes that technology has brought and will bring to society? There is no shortage of speculation on this question. See, for example, Warschauer (2000) for speculation related to English language teaching. However, those who attempt to conceptualize the world of technology take different perspectives. The technologist sees rapid advances in technological developments that transform all aspects of life, especially communication and education. In the future vision of technologist Kurzweil (1999), more communication will take place between humans and computers than will take place between humans, in part due to advances in technologies for language recognition. A social pragmatist moderates this perspective with anecdotes about how technology really works – or fails to work – in the real world, and with analysis of how human communication is accomplished within organizations (Brown & Duguid, 2000). The critical analyst takes still another perspective, viewing technology as a force that is neither neutral nor inevitable, and therefore requires careful analysis and deliberate action. The plea of the critical analyst is for educators to move beyond a shallow, technically oriented discussion of technology in education and society to analysis of the values inherent in the use of technology for communication and education.

Implications for applied linguists can be found somewhere within the mix of these diverse perspectives. The technologist argues persuasively that teachers and researchers should be educated about technological possibilities that could improve or change their work, and that the changes are sweeping and rapid. At the same time, the social pragmatist perspective reminds us not to be so focused on the future that we fail to see today's reality: Real options for technology in a particular setting need to be conceptualized in view of the experience of others and in view of teachers' context and experience. The critical perspective adds that teachers and researchers should be critically aware of the connection between technology and culturally bound ideologies. What the three diverse perspectives share is a

conviction that technology is a force to be dealt with, particularly by people concerned with communication, business, education, and cultural implications of seemingly neutral practices. The impact of technology in applied linguistics can be seen concretely through examination of some of the differences that it makes for language learners and language teachers.

1.5.1 Language Learners

Recent publications in applied linguistics have pointed out that the English language that learners use on the Internet is different in some important ways from what they needed to be able to use in the past. Crystal analyzed the registers that he calls "Netspeak," concluding that "[t] he electronic medium... presents us with a channel which facilitates and constrains our ability to communicate in ways that are fundamentally different from those found in other semiotic situations" (Crystal, 2001). The language that is required in the technology-shaped registers of English use suggests that the English that learners need is different from what it was before these new semiotic situations were created through the introduction of e-mail, discussion lists, chats, and the like.

Different registers for language use directly implies that the communicative language ability for the 21st century is systematically changing. As Rassool concludes from her analysis of the language in the world of technology, " [ultimately, communicative competence refers to the interactive process in which meanings are produced dynamically between information technology and the world in which we live...". Accordingly, Warschauer suggests that rather than skill in reading and writing, language learners need to acquire competence in "reading/ research" and writing/ authorship": "We cannot simply choose our tools (i. e., to write longhand, use a typewriter, a word processor, or e-mail) in order to be literate participants. Instead, the technology chooses us; it marks us as full, marginal, or nonparticipating..."

For many learners, the opportunities opened through communication on the Internet have sparked new motivation for using the target language with peers, who are readily accessible. As a consequence, these new registers created through technology and the communicative language ability required for engaging in them successfully are anything but obscure and remote to the lives of language learners. Instead they are the vehicle through which learners can express themselves and receive genuine responses to their contributions.

1.5.2 Language Teachers