

# The History of CALL: The Intertwining Paths of Technology and Second/Foreign Language Teaching

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## ABSTRACT

*It has been over 50 years since the emergence of computer-assisted language learning (CALL) that would forever change how second/foreign languages are taught. This article presents a historical overview of the evolution of CALL from the early years of the mainframe computer to the integrative technologies of the 21<sup>st</sup> century. It examines the evolution of the dual fields of educational technology and second/foreign language teaching as they intertwined over the last half of the 20<sup>th</sup> century into present day CALL. The paper describes the paradigm shifts experienced along this journey and the current state of CALL as new technologies rapidly advance language teaching capabilities and challenge practitioners to provide optimum learning environments for the future.*

*Keywords:* CALL Overview, History of CALL, Languages, Learning Environments, Technology and Second Language Pedagogy

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## INTRODUCTION

Technology capabilities today are expanding exponentially providing both extraordinary opportunities and great challenges to computer using second language teachers to keep abreast of the latest tools and understand their pedagogical implications for their teaching practices. The importance of technology in second language or foreign language teaching is now well established with teachers no longer questioning the need for computer-assisted language learning (CALL) but rather seeking the most effective ways for integrating technology into their teaching. In order to develop an appreciation of both the role of technology in second language

teaching and the pedagogical implications of today's (CALL), it is important for second language teachers to understand the evolution of the two fields that have defined CALL. The stages of development for both educational technology and second language teaching (SLT) have not followed linear, chronological paths with newer technologies and teaching practices replacing all that preceded them. Rather, these two fields have evolved based on recognition and transformation of past best practices and theories, development of new knowledge, and utilization of rapidly developing technologies.

The goal of this article is to trace the developments in technology and second language teaching beginning in the 1960's when both disciplines were grounded in the behaviorist (Skinner, 1957) theories that supported programmed

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instruction and the Audio-lingual Method that dominated second language teaching of that era to today's CALL with its integrative uses of technology. The paper examines the paradigm shifts in the development of second/foreign language teaching and CALL that spanned 50 years and concludes with an analysis of current pedagogy and optimal CALL supports for language learning to flourish. For simplicity sake, the term second language teaching will be used in this article to include both second language and foreign language instruction.

## EARLY CALL AND STRUCTURAL LANGUAGE TEACHING

CALL has its origins in the 1960s with the development of the mainframe computer and programs located at several universities around the world. The computer courseware, developed using programming languages, was stored on a mainframe typically located on campus and was accessed by students at connecting terminals. Stanford University was home to an early computer project directed by Atkinson and Suppes that included introductory Russian language study (Suppes, 1981; Ahmad, 1989) in which students were required to type answers to questions in Russian and perform various types of transformation exercises. Another comprehensive program in the United States, The PLATO (Programmed Logic for Automated Teaching Operations) system, was introduced at the University of Illinois (Hart, 1981) first for the teaching of a Russian reading course based upon the grammar-translation method. The program stressed direct translation, brief grammar explanations, and vocabulary and grammar drills. The PLATO program was later offered at several universities in multiple languages including English in which students worked their way through one discrete linguistic structure at a time. Chapelle (2001) cites several similar undertakings by individuals or groups at major universities such as the collaborative project of three Canadian universities in the

development of the CLEF (Computer-Assisted Learning Exercises for French) and the TIC-CIT (Time-Shared, Interactive, Computer-Controlled Information Television) project that by 1980 had courseware for language study in ESL, French, German, Spanish, and Italian (Chapelle, 2001).

The early computer-assisted instruction of the 1960s was grounded in the psychological principles of B. F. Skinner's (1957) operant-conditioning model of linguistic behavior, a model which relied heavily upon positive reinforcement. The programmed instruction structured the learning process according to the Behaviorist model providing feedback, frequent reinforcement, branching, and self-pacing (Stevens, 1989). Ahmad, Corbett, Rogers, and Sussex (1989) cited key aspects of programmed instruction that were particularly relevant to computer-assisted language learning in the early years. Programmed instruction emphasized the breaking down of the learning task into small discrete steps. Programmed instruction was most suitably applied to specific, concrete areas of language including morphology, vocabulary, and certain aspects of syntax. The self-pacing characteristic of programmed instruction was made possible through a format which presented clearly defined areas of language in discrete steps. This allowed students using CALL to move at their individualized speeds. The capacity to give immediate feedback was one of the most advantageous features of programmed instruction providing language students with an additional resource for feedback other than the instructor.

This type of programmed instruction with the computer viewed as the task-master matched perfectly with the structural linguistic theories (Fries, 1952) of language learning. These theories in combination with the behaviorist theories of psychology were most apparent in the second language teaching approach known as the Audio-Lingual Method (ALM) (Richards & Rodgers, 2001) that dominated in the 1960s, especially in North America. The structural linguists engaged in scientific descriptive analysis of languages and saw a direct application of these

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