In the last two or three years there has been an increasingly widespread realization that the digital computer may be a powerful educational tool, over and above its use as a general purpose problem-solver. On at least a half dozen campuses across the nation today research projects are being conducted on the ways in which computers can be used to advantage in the educational process. The author is privileged to be a part of one of these educational ventures through a joint research agreement between the University of California at Irvine and IBM.

When the University of California at Irvine opened its doors to the first undergraduate class in 1965, it was already dedicated to a massive campus-wide experiment in the utilization of computers in the educational process. Experiments are in progress or are planned for computer utilization in the instructional process proper, in student affairs such as enrollment and schedule-planning, in the library, in fiscal affairs, and in management information retrieval. The purpose of this paper is to report on the activities in the application of computers in the instructional process proper, and particularly on our experiences and plans in the biological sciences.

THE UCI INSTRUCTIONAL COMPUTER SYSTEM

The "hardware" portion of the instructional system at UCI consists of a central processor unit (currently an IBM 1410/1440 system, soon to be replaced by an IBM system 360/model 50 computer) connected to twenty remote typewriter terminals (IBM model 1050). This system operates in a time-shared mode, with each terminal being served in rapid sequence by the central processor unit, and with each terminal being assigned a portion of the fast access memory in the computer. The high volume memory required for the storage of instructional materials is provided by magnetic disc units. Back-up copies of instructional material are

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