

DIAL ACCESS RETRIEVAL AND THE ADOPTION PROCESS-A STUDY ON THE SUCCESSES AND FAILURES OF A TECHNOLOGICAL INNOVATION

F. Knowlton Utley

Abstract

In an attempt to define effective procedures for the adoption of technological innovations, the author conducted a study of the successes and failures of dial access retrieval systems. Because of the interesting and controversial history of this medium, the study sought to determine why some schools chose this medium, how it was utilized and modified, and why it failed in some instances. The survey instrument used in this study was sent to schools using their systems and to schools where the systems had been discarded. The 68% rate of return did produce valuable data for a multiple regression analysis.

KEY WORDS: Dial Access retrieval, adoption process, innovation, research, languages.

Many technological innovations in education have been developed in the twentieth century. Many have brought about a change in our learning styles. Some have been readily accepted while others have caused apprehension and mistrust. What causes the successful adoption of one technological innovation and the failure of another? The answer may be found in a study of the medium of dial access information retrieval.

The development of dial access information retrieval grew out of a concern expressed in 1960 by University of Michigan speech professor Rand Morton *1. Morton was anxious to overcome some technical problems faced by his students. He believed that learning a language was an acquired skill and therefore sought a technological system which would provide for the delivery of specific drills for language acquisition. In an earlier attempt to accomplish this, Morton had prepared ten minute lessons on audio cartridges. After using a cartridge, the student would go to a checkout deck and pick up another-if available. Unfortunately, the students constantly experienced difficulties with balky equipment.

Morton felt that, in order to eliminate the students' frustrations, it would be necessary to get the equipment out of their hands. While lecturing at a conference, Morton discussed these concerns with one of the participants who happened to be David Joslow, a telephone systems specialist from New Haven, CT. The two spent a considerable amount of time discussing the problems with the information delivery system then in use at the University of Michigan

and began looking for an improvement. What came about was a decision to create a one-way, party line, dial access system. *2. Unfortunately, putting the concept into practice proved to be quite difficult.

Joslow tried unsuccessfully to find a telephone equipment company to install such a system. Finally, under pressure from the university administration, Joslow himself accepted the contract and completed installation in 1961. It proved to be highly efficient.

Instead of dedicating individual positions to specific language drills, the new system permitted students to use any one of 150 positions at any time of the day. News of the Michigan installation spread quickly and other institutions began to investigate this mode of instruction.

In the beginning, several New England colleges and private schools installed similar systems for use as language laboratories. *3

Among these early institutions which built dial access retrieval systems were Nasson College, the University of Connecticut, Wesleyan University, and the Hotchkiss School. Before long, other disciplines had recognized the value of this delivery system. Thus such subjects as music, drama, poetry, speech, and shorthand were soon made available on the various systems. Then another system generation appeared.

In 1965, video retrieval became a reality. Such institutions as Ohio State University, Oklahoma Christian, Oral Roberts University, and Grand Valley State College installed major systems which included both audio and video functions. Interest in the medium began to swell. Schools and Universities throughout the country, impressed by the sophistication of this new technological innovation, became anxious to acquire similar systems. Unfortunately, due to the rapid growth of this medium, the data available on the effectiveness of this medium remained sparse.

Nevertheless, with federal funds readily available between 1965 and 1970, many schools purchased dial access retrieval systems. Time and again, this action was taken without adequate knowledge necessary to maintain or support the systems. Furthermore most schools were totally ignorant of the necessary measures to ensure genuine faculty support. It was inevitable that interest in the medium would soon change. Faced with student discontent, rising maintenance costs, unfulfilled expectations, and a general lack of faculty support, by 1970 the honeymoon with dial access retrieval systems was over. Though numerous systems remain in use today, many more failed and were dismantled.

Much can be learned from this experience. In the late 70's, the author conducted a study to determine factors involved in choosing a medium of information delivery. *4 The specific medium chosen for study was dial access retrieval and a specific goal was to answer the question as to why some systems were still in use while many others had been disconnected.

The survey instruments were sent to randomly selected subjects in order to gather data on the operational status of the selected systems. Additional questions were directed at the physical and implementational factors common to all situations. A 68% return of the questionnaires provided very interesting data. Through the use of multiple-regression analysis, some common factors were associated with systems still in use, while other factors were closely related to those systems no longer in use.

Factors Common to Systems Still in Use

The study revealed that (1) a positive attitude on the part of the person responsible for the medium increased the chance for adoption of the system. Other positive factors were (2) involvement of the administration in needs assessment and system selection, and (3) faculty involvement in the development of educational objectives. Faculty interaction obviously brought about a greater commitment to the medium. The final factor (4) was the provision for financial support for maintenance, service, production, and programming all of which contributed positively to the chances for adoption of dial access retrieval. (Obviously, the adoption process extends far beyond mere installation and the ability to control the system. Adoption also implies that the faculty has approved the system as evidenced by its incorporation into the instructional process.)

Factors Common to Systems no Longer in Use

Those factors closely related to systems no longer in use were (1) the employment of federal funds to acquire the system, (2) later expansion of the system, (3) the employment of outside technical consultants, and (4) the use of incentives to encourage faculty members to produce programs. Other negative factors were (5) encouraging the faculty to select the system, and (6) attempting to meet all of the stated educational objectives.

According to the data derived from cross-tabulations in the study, the decline in the use of dial access has ended and many of the remaining operational systems are receiving moderate to considerable use. The limitations of the medium have been recognized and those administrators responsible for some of the operational systems have defined the need for the systems.

Hopefully, the conclusions from this study will be used in the adoption process for future technological innovations in education. Present technology will demand the employment of more advanced communications systems. Obviously, educators must be prepared to utilize this and other innovations as an integral part of the instructional process. Hardware must be designed to meet the needs of instructional programs while educators must become competent in the creation of software and courseware.

For a copy of the data collection instrument, send a self-addressed, stamped envelope to the author at the address indicated below.

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F. Knowlton Utley, Director
Media Center, Station 9
Livingston University
Livingston, AL 35470



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