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ABSTRACT

This study determined the prominent brands of microcomputers presently in use in Southeast Texas schools, the reasons for their selection, and computer use and brands in relation to grade level. Questionnaires related to microcomputer use were sent to 115 school districts in southeast Texas in 1985. The return rate was 83 percent. A total of 8,258 computers were reported by 96 school districts, with an average of 86 computers per district. Of the 8,258 computers, 68 percent were Apple, 20 percent were Commodore, 11 percent were Radio Shack, 1 percent IBM, and 1 percent other brands. When comparing by grade levels, 36 percent of the computers were at the elementary schools, 32 percent were at the junior high school level, and 32 percent were in high schools. (Author/CB)

COMPUTERS IN SCHOOLS OF SOUTHEAST TEXAS

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ABSTRACT

Questionnaires related to microcomputer use were sent to 115 school districts in Southeast Texas in 1985. The return rate was 83 percent. A total of 8258 computers were reported by the 96 districts with an average of 86 computers per district. Of the 8258 total computers, 5591 (68%) were Apple; 1641 (20%) were Commodore; 874 (11%) were Radio Shack; 85 (1%) were IBM; and 67 (1%) were other brands.

Comparing districts by brands resulted in 81 districts (84%) with Apple, 33 districts (34%) with Radio Shack, 29 districts (30%) with Commodores; 12 districts (13%) with IBM, 10 districts (10%) with other brands, and 2 districts (2%) with no computers.

When comparing by grade levels, 36 percent were at the elementary schools, 32 percent were at the junior high school level, and 32 percent were in high schools.

COMPUTERS IN THE SCHOOLS OF SOUTHEAST TEXAS

Purpose of the Study

Computers in schools have become in a few short years a complex and highly controversial field. The growing number of computers in the schools places new demands on educators. If the potential of educational computing goes unrealized, educators will inevitably be criticized for failing to prepare students for the future. Educators face both challenges and opportunities as they attempt to deal with the goal of computer literacy, as yet not a well defined term. On one hand, schools have to respond to the increasing pressure from legislators, school boards, administrators, and parents to meet this goal. On the other hand, schools have to respond to multi-million dollar advertising campaigns by computer manufacturers.

The next few years are going to be crucial for the future of education and educational computing. Their combined fate depends to a large extent on careful planning. Purchase decisions have to be made with care as schools face monetary restrictions. Decisions have to be made as to how many computers will be bought, which brand should be selected, and how the school will manage to pay for the privilege of using them.

The purpose of this study was to provide educators with the data necessary to make a more knowledgeable decision in relation to the purchase of computer hardware for education. Data gathered concerning

prominent brands presently in use and the reasons for their selection, and computer use and brands in relation to grade level.

Review of the Literature

The United States is rapidly becoming a computer-dependent society as computers are proliferating and impacting every aspect of the nation's life. Development and use of microcomputers (micros) have spurred increased interest in the use of technology to improve educational quality and access throughout the nation. It is estimated that the number of micros in elementary and secondary schools is tripling every eighteen months (Grayson, 1984).

A study by International Data Corporation (Hayes, 1983) helps place educational computer use in perspective with other major uses of micros. The percent growth in the number of computers from 1981 to 1982 was 138% for home, 96% for business, 46% for science, and 32% for education. The total number of microcomputers sold in 1982 was 1,129,000 units. TALMIS (Komoski, 1984), a marketing research firm, surveyed schools nationally as to the use of computers. TALMIS estimated that the parents of one out of every six school-age children have already purchased a computer for their child's use at home. This means that there are currently about five million computers in the homes of U. S. families with children. Another TALMIS estimate puts the number of computers in the schools at 550,000.

On the surface it may appear that schools cannot continue their spending spree on micros, but a different impression may be gained when those expenditures are viewed in a broader context. Recent criticism of American schools has sent educators and the general public on a search for ways to improve the image as well as the operation of schools. Within the next five years, educators will look for ways to integrate micros into the school curriculum because of mandates such as those from the 1984 Texas Legislature related to computer literacy in the junior high school.

Anderson and Smith's (1983) study of instructional computing patterns in Texas schools was conducted in the spring of 1983 by researchers at the University of Texas-Austin in collaboration with the Texas Education Agency. Questionnaires were mailed to two hundred randomly selected Texas schools districts. The return rate was seventy percent. They found that computer use increased with grade level, and that this trend held true for all school size categories. By third grade, fifty percent of the districts were reporting use, and this steadily increased to eighty-nine percent by the twelfth grade (see figure 1).

The brands of computers most often found in the United States are consistent with the brands found in Texas. The five brands most often found in the field of education according to a study by Archer (1981) are a) Apple, b) Radio Shack, c) Commodore, d) Texas Instrument, and e) Atari. The IBM PC and the now defunct PC Jr are also found in a few schools. Market Data Retrieval, a research group, stated that the school market is unaffected by the current national slump in computer sales and that the

percentage of the USA school market consists of the following: a) Apple (51%), b) Radio Shack (20%), c) Commodore (15%), d) IBM (4%), e) others (10%) (Education Week, 1985).

Hardware Selection

Very little research was found concerning factors that influence schools in the selection process. The reason most often given for not using computers was "too costly" (Beal, 1983). Hamilton (1983) concluded that the fact that Apples were most predominate appeared to be due in part to the availability of compatible software through the Minnesota Education Computing Consortium (MECC), considered to be the most popular source of courseware.

The Hamilton report stated that the most disturbing occurrence was that, in some cases, the purchasing of equipment on a large scale had preceded the actual planning for what to do with it. Such purchases appeared to be driven by computer vendors rather than by district-wide planning.

Methods and Procedures

The population of the study included the 115 school districts serviced by Region IV and Region VI of the Education Service Centers. These centers service twenty-two counties of Southeast Texas in the Houston area. Ninety-six questionnaires were returned from ninety school districts, five private schools, and one university. The return rate was eighty-three percent.

A total of 8258 computers were reported in use by the 96 districts

with an average of 86 computers per district. Ten brands of computers were reported: Apple, Atari, BASIS, Commodore, Compaq, Dolphin, IBM, Radio Shack, Sperry-Rand, and Texas Instrument. Of the 8258 total computers, 5591 (68%) were Apple; 1641 (20%) were Commodore; 874 (11%) were Radio Shack; 85 (1%) were IBM; and 67 (1%) were other brands. (see figure 2).

Comparing total districts with brands of computers resulted in 81 districts (84%) having Apple computers in their schools, 33 districts (34%) with Radio Shack equipment, 29 districts (30%) with Commodores, 12 districts (13%) with IBM, 10 districts (10%) with other brands, and 2 districts (2%) with no computers. (see figure 3).

In comparing the number of computers by grade level, it was found that there were 2979 of the 8258 computers (36%) at the elementary level; 2622 (32%) at the junior high school level; 2624 (32%) at the high school level; and 33 (1%) at the university level. (see figure 4).

In response to the question as to reason for purchasing, software availability (34%), intended use (8%), and cost (6%) were the three most popular responses.

Conclusions

From the results of the study, several very important general conclusions can be made. First, it was apparent that Apple computers were preferred in Education Service Centers Region IV and Region VI at all

grade levels. The most common reason for this seemed to be the wide-range of software availability. Another reason was the purchase and bidding arrangement for Apple computers through Education Service Center Region IV starting in 1981. They also provided the training on Apples. Cost was associated with the Commodore computers, and network ability and service were most often associated with Radio Shack equipment.

A replication of the study with a larger population would be of value, especially concerning the factors that influence the purchase of hardware. New questions deserve answering, such as: Is one brand of computer better suited for the required Texas junior high computer literacy course? Is one brand of computer better for higher level programming and computer science courses? Is one brand of computer best for computer assisted instruction? Do Education Service Centers tip the scale in favor of one particular brand of computer? Is there value in having the same brand of computers throughout the district or is exposure to a variety of brand preferred?

The status of microcomputers in education changes very rapidily. In addition, the computer market itself changes constantly and unpredictably. Because of the changes, continual research in the field of educational computing is needed.

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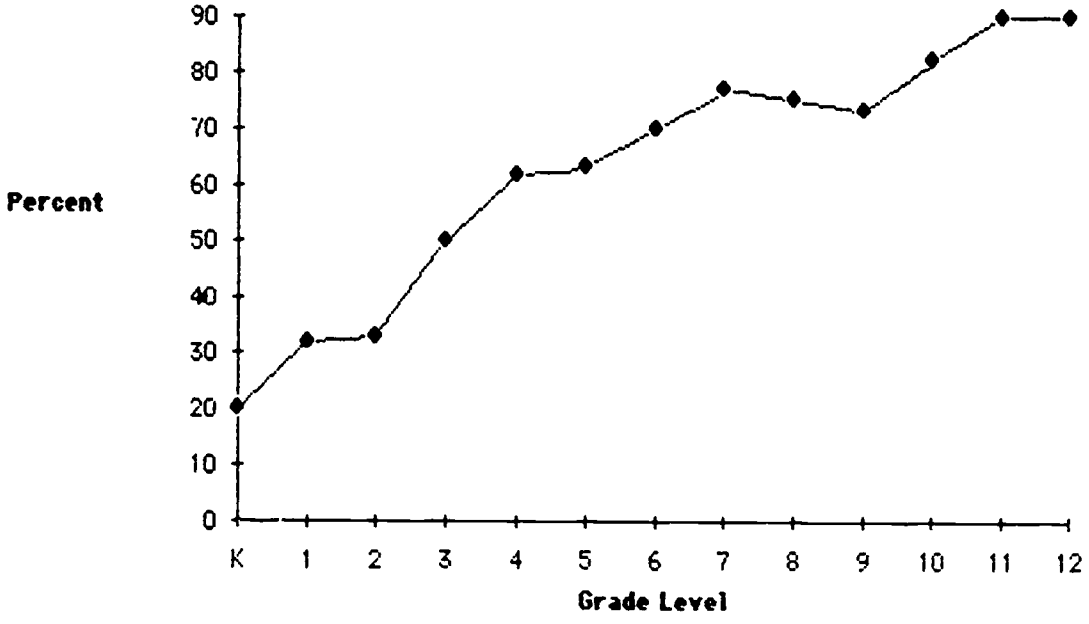

Figure 1. Percent of computers by grade.

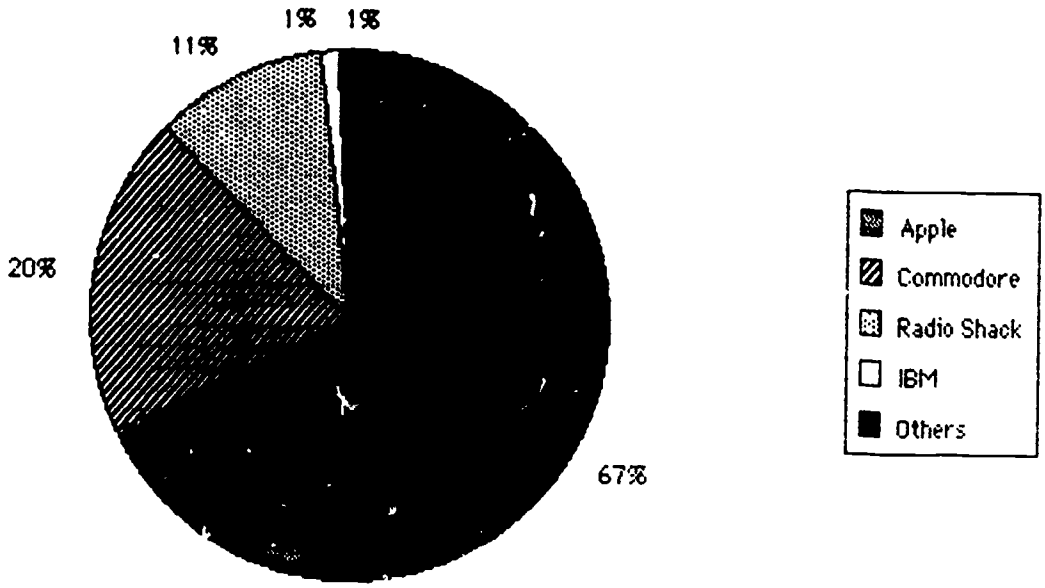

Figure 2. Percent of computers by brand.

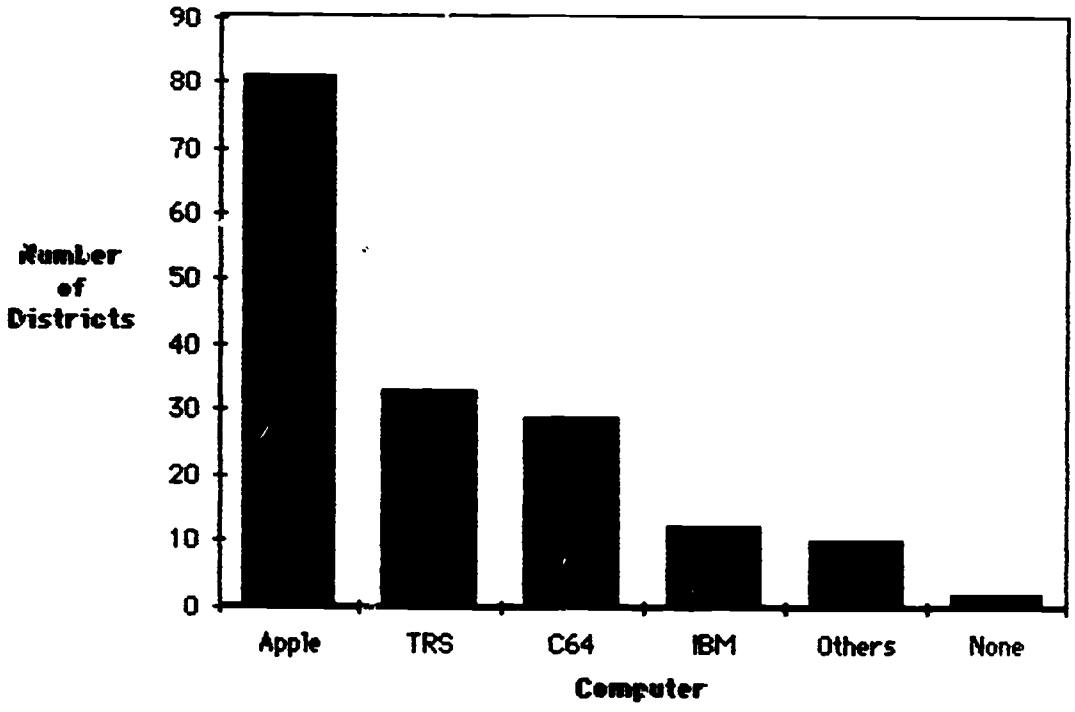

Figure 3. Districts with brand of computers.

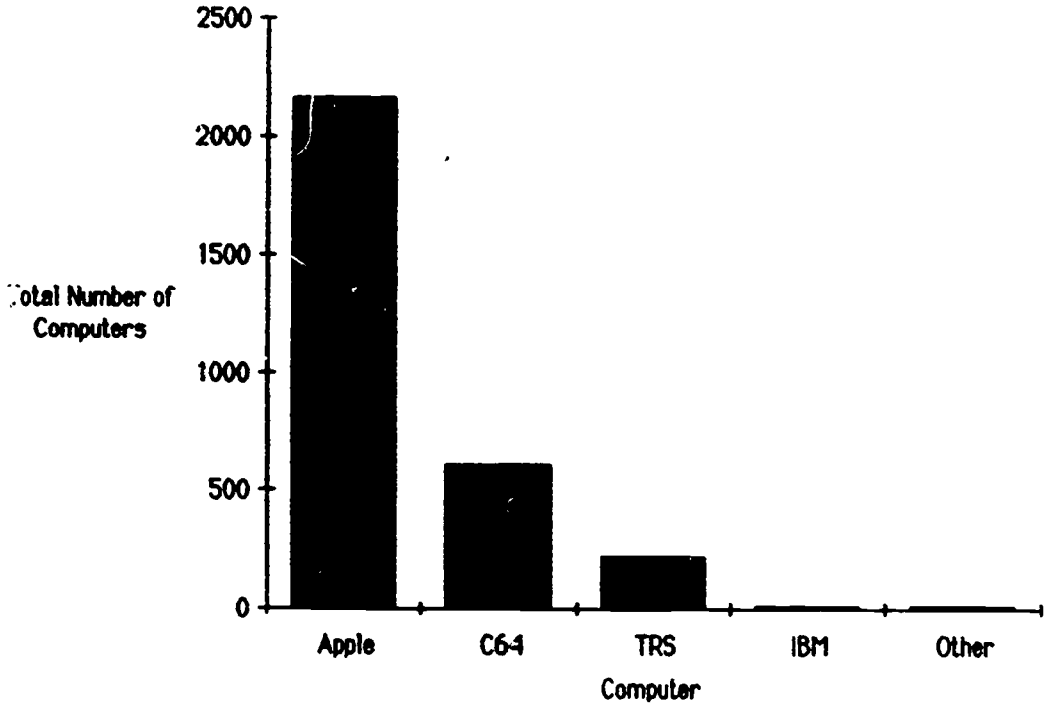

Figure 4. Number of computers by brand.