

Approved March 29, 1991
Date

MINUTES OF THE Senate COMMITTEE ON Economic Development

The meeting was called to order by Senator Dave Kerr at
Chairperson

8:00 a.m./~~pm~~ on March 27, 1991 in room 123-S of the Capitol.

All members were present except:

Senator Paul Feleciano
Senator Ben Vidricksen

Committee staff present:

Bill Edds, Revisor of Statutes' Office
Lynne Holt, Legislative Research Department
LaVonne Mumert, Committee Secretary

Conferees appearing before the committee:

Dr. Raj Chopra, Superintendent, Shawnee Mission School District
Dr. Tom Hawk, Director of Secondary Curriculum, Manhattan/Ogden School District
John Koepke, Kansas Association of School Boards

Senator Dave Kerr, Chairman, called the meeting to order and introduced
Dr. Raj Chopra.

HB 2179 - Technology education, school district tax levies for development
or enhancement of program

Dr. Raj Chopra provided testimony in support of the bill (Attachment 1). He talked about the integration of technology in the classroom and explained that this subject was studied by an ad hoc committee which resulted in a published report (a summary of which is Attachment 2). A proposal for computer vendors was then developed and resulted in the selection of a vendor and five pilot sites. Dr. Chopra talked about the end result of the pilot program allowing for individualized instruction and detailed information for parents explaining what concepts and areas their own child has worked with, in addition to the standard report card. Dr. Chopra stressed that previous technology efforts have failed because of lack of training. He said that HB 2179 would provide a vehicle for local school boards to determine their own needs for efforts in technology programs. There was some discussion about a possible lack of equity in that 2 mills would produce varying amounts of revenue from district to district.

Senator Salisbury asked about the training portion of the program. Dr. Chopra said that school teachers and administrators participated in seven or eight days of training in August, for eight hours a day, and that training continues on an on-going basis during the school year. Dr. Chopra said the recent graduates of schools of education are not trained in technology and it is his hope that elementary and secondary schools can put enough pressure on the universities that this training will be included in their curriculum. Dr. Chopra emphasized that computers are only one element of technology. In response to questions from Senator Salisbury, Dr. Chopra said that the teachers in the program took computers home, both before and after the training sessions. He noted that in the second year of their program, they will use a buddy system utilizing teachers who participated in the program this year. He said that his district has shifted funds from "effective instructional strategy" training to technology training. Chairman Kerr asked if there is a possibility that districts would utilize the provisions of HB 2179 but basically waste the funds by poor selections and decisions if they have not undertaken an indepth study such as the Shawnee Mission school district. Dr. Chopra said that would be possible but he and his district are more than willing to share what they have learned and would welcome visits by other districts.

(Dr. Chopra also provided an article from Education Week - Attachment 3 and "Technology in Education Brief" - Attachment 4).

CONTINUATION SHEET

MINUTES OF THE Senate COMMITTEE ON Economic Development,
room 123-S, Statehouse, at 8:00 a.m. ~~PM~~ on March 27, 1991

Dr. Tom Hawk testified in support of the bill (Attachment 5). He talked about the urgency of integrating technology into classroom curriculum. Dr. Hawk said that, while he is not sure whether his own district's school board would participate in the program, he feels it is important for districts to have the option.

John Koepke provided written testimony (Attachment 6). He expressed concerns about the issue of equity and suggested that it would be more appropriate to fund the program through additional budget authority. He also urged that telecommunications be specifically mentioned in the definition.

There was discussion about the pros and cons of funding by mill levy versus budget authority.

The Committee was also provided with a statement in support of the bill by Blue Valley U.S.D. 229 (Attachment 7).

The meeting was adjourned at 9:00. The next meeting of the Committee will be Thursday, March 28, 1991.

TESTIMONY BEFORE SENATE COMMITTEE ON ECONOMIC DEVELOPMENT
ON HB 2179

By Dr. Raj K. Chopra
Superintendent, U.S.D. 512

March 27, 1991

Mr. Chairman:

I am honored and consider it a privilege to have this opportunity to share my thoughts along with those of many educators and patrons in the Shawnee Mission School District regarding the use of technology to enhance our teachers' capacity to teach and our students' capacity to learn. Before I do that, I would be remiss if I did not mention the blessings of liberty which all of us enjoy in this great nation of ours. The opportunity to speak before you is one of those many blessings for which I am grateful.

By holding a hearing on and reaffirming HB 2179, the Committee on Economic Development is leading the way in creating a vision for the future of our young people. The dreams of tomorrow which we nurture today will one day be transformed into reality. Mr. Chairman, these future needs and changing times necessitate unprecedented preparedness. Let me illustrate my point by the following facts:

In 1990, 4% of the people worked in agriculture, 23% in manufacturing and 73% in services. By the year 2000, it is predicted that 2% will work in agriculture, 5% in manufacturing and 93% in services. By the year 2000, we will have the capacity to produce a 250-page book in six minutes. Technology utilizing computers, fiber optics, integrated software and interactive television is bound to revolutionize education. The winds of change can best be exemplified by the experts discussing the possibility of the introduction of optical computing technologies using photons of light instead of electrons. Optical computers are expected to run at a faster speed than electronic computers and light can carry a lot more information than electricity. The radical changes that we are now witnessing demand new skills for today's young people--our leaders of tomorrow. These new skills will be a prerequisite for success in a constantly changing, more complex and mentally demanding workplace.

As Sue Berryman, Director of the Institute on Education and Economy, Teachers College, Columbia University, points out, "Computers have the potential of creating dynamic environments and helping children really be able to deal with 'ifs/thens' and be able to model things."

A computer expert was quoted in the February 9, 1990 edition of The Wall Street Journal as saying, "Providing the schools with the latest technology could well require a type of central management vision that is familiar to business but almost completely alien to a 'fragmented, locally-financed educational system'."

Mr. Chairman, this committee represents that vision...the

Attachment 1
3/27/91
Sen. Eco. Devel.

vehicle to make it a reality is HB 2179 which will provide an opportunity for all school districts in the State of Kansas to expand the use of technology in education. Making the funds available in the capital outlay portion of the budget is a clean mechanism to encourage school districts to implement technology on the basis of their needs. Under the current law each school district is authorized to levy up to four mills for capital improvement including the purchase of equipment. The new bill follows the existing practice.

Lewis Perelman of the Hudson Institute and author of Technology and Restructuring of Schools addressing Excellence in Education underlines the danger in failing to implement technology in education. Perelman said, "A technological revolution is sweeping the United States and the world that will leave conventional classrooms as obsolete as livery stables and blacksmith shops."

Mr. Chairman, this great country of ours was built upon the risk takers of yesterday who envisioned immense possibilities that weren't as obvious to those blinded by the problems of the day. It is therefore no surprise that, like the visionaries of the past, this committee sees a clear linkage between education and economic development. You have shown the foresight and courage to bring the vision of technology in education to the forefront of the action agenda. The passage of HB 2179 by this committee will pave the way for all schools in the state to develop new initiatives for technology in education to meet their needs and priorities.

TECHNOLOGY IN EDUCATION



A Report of the Ad Hoc Study Team on Technology in Education

Shawnee Mission School District
June 1988

Attachment 2
3/27/91
Sen. Eco. Devel.

**Technology in Education:
*A Bold Initiative
for the
21st Century***

**A Report of the Ad Hoc Study Team
on Technology in Education**

3/27/91
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July 11, 1988

Dear Board of Education Member,

As education professionals, we readily acknowledge that it is our task to prepare our students to face the challenges of tomorrow. To ready students for the tasks they will confront in the 21st Century, we cannot be bound to the teaching methods and resources used in the one-room school houses that once dotted these plains. A century ago, humanity's pool of knowledge grew relatively slowly. Society was still bound to the "horse and buggy" technology which had existed in pretty much the same form since the invention of the wheel. Anyone who could read, write and use basic math was considered an educated person. Today, those traditional basic skills are not enough. Similarly, the education we provide today will be insufficient to meet the technological challenges that will soon be upon us.

It has been estimated that the body of knowledge available to humanity is now doubling every ten years. This incredible growth in the human experience fills one with wonder about the future. What magnificent discoveries will be made in the next decade? What marvels in communication, transportation, medicine, and education will be ours? This wonder about the future must be tempered with concern. The complexity of skills necessary to prosper in the next century will be unprecedented. To be accepted for study at the quality universities of our land or to succeed at lucrative trades, high school graduates will have to possess skills and concepts yet to be discovered. To prepare our students to use this flood of knowledge is perhaps our most critical task. It will not be easy. It will require bold, new initiatives. The 21st Century will require students well versed in technology. They will need to be taught with the "tools of the time": computers, interactive television, and other emerging technologies.

Shawnee Mission is already a leader in the educational community, providing all of its students with a solid foundation of technological knowledge. Micro-computers are currently in all SM elementary and secondary schools, and students are required to successfully complete a computer course before graduation. These positive first steps in adapting our district for the requirements of the future have been helpful. However, they are only a beginning.

Our next effort must be a significant one. Many difficult and important decisions will be required if we are to make effective use of available technology in the educational process. A substantial financial investment will be required over time. Fortunately, we need not face this task alone. Corporate and community resources can be tapped. Already, consultants from IBM Corporation--some of the most knowledgeable professionals in their field--have given technical expertise to the applications study. In addition, competent, motivated staff members are enthusiastic about beginning the task. Nine such individuals have already labored countless hours to study the District's need to move ahead in technology. Their findings have been addressed in a comprehensive report that I am releasing today. I have summarized, in the following pages, the essentials of that report. I am convinced that it is vital for Shawnee Mission to begin harnessing the power of today's technology. It will benefit, not only our students, but our entire community for generations to come.

Respectfully yours,



Raj K. Chopra, Superintendent

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**SUPERINTENDENT'S SUMMARY
of the
TECHNOLOGY IN EDUCATION REPORT**

A Bold Initiative for the 21st Century

At my direction, a nine-member group called the Shawnee Mission Technology Study Team was formed to address the goal of improving District educational programs by utilizing state-of-the-art technology to prepare students to live and work in the 21st Century. In my charge to the committee, I **identified the following pressing concerns:**

1. The need to provide teachers more time to teach
2. The need to provide increased learning opportunities for students
3. The need to provide parents, teachers and administrators better and more timely information about their student's progress, attendance, homework assignments, and related topics
4. The need to design cost-effective ways to improve instructional management processes through the application of technology
5. The possibility of using vacated District facilities as technology testing/demonstration sites
6. The possibility of developing mutually-beneficial partnerships with technology-oriented businesses

The study team agreed upon the following guidelines:

1. Both instructional and administrative uses of technology should be studied.
2. Current operations and procedures should be evaluated.
3. Team members should receive training and information updates to increase each member's awareness of the use of technology in education.
4. Students, staff, and community representatives should be interviewed / surveyed to determine perceived needs.
5. Data should be collected, analyzed and interpreted, and recommendations for technological improvements developed.

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Following an intensive study of District needs, members of the team worked with IBM consultants to create a blueprint for programs and an instructional environment that would assist students in entering the complex work places of the next century.

The planning emphasis was on using technology to increase teachers' instructional time and teaching skills that empower students to become lifetime learners, to confront new situations with adaptability, and to use computers and other technology in dealing with the challenge of the Information Age.

This report describes how these exciting goals can be met through the systematic expansion of current and/or future technologies.

The Ad Hoc Study Team on Technology in Education members included:

Ken Cheves
Mary Fugate
Sharon Hamil
Wayne Hickox
C.H. Jacobs
Marilyn Meyer
Terry Parks
Lyle Stenfors
Donald Wilson

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Recommendations:

The findings, conclusions and recommendations of the study concentrated on six application areas:

1. Instructional Management
2. Student Records
3. Financial Applications
4. Human Resources
5. Information Management Services
6. Facilities Planning

Instructional Management System:

Shawnee Mission should develop a district-wide instructional management system which utilizes the latest technologies. It should provide additional computers and an integrated network for both student and teacher use, K-12.

To accomplish this there is the need to implement an on-line system for managing instruction (e.g. Basic Skills Management), recording individual student achievement data, automating grade reporting and enhancing the communication between parents and teachers.

Teachers should also have an on-line access to curricular objectives, teaching strategies, subject area resources, learning activities and tests for all curricular areas.

The improvements listed above would increase the time available to teachers for direct instruction through reduced paperwork. There would also be increased opportunities for students and teachers to have access to computers. Parents would also be better informed about student progress, absenteeism and homework.

Student Records:

Teachers and administrators should have on-line access for retrieval and input of student records, including class schedules, master schedules, health data, standardized test results, transcripts and attendance. This system should network with all schools and District offices.

It would make data storage and retrieval more efficient throughout the District. Information could be received more quickly, with less paperwork and less duplication of effort. Developing individual student schedules could be completed more efficiently, thus providing administrators and counseling staff with more time to devote to students.

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Financial Applications:

A computer information management system should be created to meet the needs of the District in both instruction and management.

Financial management can be made much more effective with the availability of trained personnel and state-of-the-art equipment, including integrated mainframe and microcomputer systems.

The financial applications which a computer system linking all District administrative offices could facilitate:

- . on-line budget planning, reporting and monitoring
- . on-line warehouse inventory
- . on-line requisitioning and purchasing of supplies, materials, equipment and services
- . on-line accounts payable/receivable
- . on-line District and building level monitoring of inventories
- . on-line payroll processes

Human Resources:

The effectiveness of Human Resources management should be enhanced through the application of a state-of-the-art computer system.

Educational organizations by their very nature are people-intensive organizations. Over eighty-percent of a typical school district's budget is allocated to salaries and benefits for employees. The development of a data base of employee profiles (including assignment, qualifications, evaluations, certification information, and record of inservice training) would reduce paperwork and improve class scheduling and teacher assignment.

The District should implement a system of computer processing and approval of requests for travel, substitutes, payroll information, security requests and other functions. This would substantially reduce paperwork and labor.

Employee recruitment and selection could be enhanced through an electronic applicant information storage system. Applicant information, including interviews, staff assessments, qualifications and preferences would make the screening of applicants more efficient.

Human Resources could also develop a more efficient substitute request system, including information on qualifications, inservice training, school preferences, and performance information. This would increase the efficiency of assigning substitutes and improve instruction by helping match resources with requirements.

The confidential nature of employee information would require a system which can be accessed only by authorized personnel.

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Information Services:

Create an integrated Information Management Services Department by examining and reorganizing the Data Processing Department to integrate management and instructional application services. The concentration of resources made possible through this reorganization would improve coordination, planning and communication.

A system for networking the buildings for maintenance would improve scheduling, planning, communication and monitoring of progress.

Computerizing the District's supply catalog and catalogs of other instructional resources (films, tapes, video, texts, periodicals, library resources, library circulation and library processing services) would provide teachers with more instructional time and make the staff more aware of current resources available.

District calendars could be created and coordinated electronically. This would facilitate scheduling and reduce scheduling conflicts can save time.

Creation of a two-way communications system between District facilities would increase effective communication, reduce travel time, allow for direct access to more information and save paper costs. Additional savings could be made through electronic network between all buildings.

Facilities Planning:

New facilities and facilities under construction should be designed to be compatible with the expanding technologies.

This kind of advanced planning would make the implementation of current and future technologies easy and cost effective, ensure appropriate power sources, conduits, and cabling. It would also ensure that teacher energy and time is viewed as a high priority in planning facilities and provide the maximum potential in instruction.

A Word about Implementation

The above recommendations are ambitious--but realistic. If implemented over a five to seven-year period, this plan will enable the District to make this great transition into the technological *revolution* which our society is now undergoing.

With an incremental, step-by-step approach, we would be able to place each component of technology in place, train staff and/or students in its use, and then go on to the next stage.

The investment in equipment, installation and the software required to provide the needed services will be significant. The District must consider how to make available the necessary financial resources to meet this challenge. I have already appointed a committee, headed by Associate Superintendent Lyle Stenfors, to:

- conduct a study of financial implications
- analyze available funds
- establish implementation priorities based on available finances
- develop an implementation timeline

I am confident that we will find a way to implement this plan, as it is vital if we wish to prepare our young people to function effectively in the world of today--and tomorrow.

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N.E.A. Urges Teachers To Tap Technology's Power

By Peter West

SAN FRANCISCO—A national conference on technology in the classroom held here has marked the National Education Association's first official steps toward encouraging teachers to embrace electronic learning aids to improve education and speed the restructuring of schools.

Officials of the nation's largest teachers' union described the meeting as an attempt to strengthen what many experts have called the "weak link" preventing the widespread adoption of computers and other electronic aids into pedagogy—the reluctance of many teachers, either because of fear of change or anxiety about job security.

Experts in the field have often argued that computers and other technologies will not become an integral part of the typical classroom unless teachers are properly equipped, well trained, and committed to taking advantage of them.

The union's decision to hold the conference, and the speeches given at it, seemed to indicate that the N.E.A.'s leadership believes that teachers must not allow themselves to fall behind in the electronic revolution.

"It's absolutely essential that we not stand still or stand pat," said Don Cameron, the organization's executive director, at the opening session of the meeting, which ended early last week. "The technology is not going to go away."

Officials also conceded that the union in the past has not led the call for wider adoption of electronic learning aids. But they argued that this conference, which drew more participants than any previous N.E.A. meeting on a single issue, represented a milestone on the road to changing that stance.

"In many ways, this is a watershed event," Mr. Cameron said.

'We Have To Do It Ourselves'

Keith B. Geiger, president of the union, opened the meeting with a multimedia *son et lumière* more reminiscent of a rock concert than an electronic classroom.

In his presentation, Mr. Geiger stressed that effective use of technology will be vital in order to meet the national education goals.

"This conference is about restructuring schools," he said. "It's about changing some of America's most cherished school traditions. Everything you know about education is changing."

Other speakers, however, sounded more cautionary notes.

A. Gary Ames, president and chief executive officer of U.S. West Communications, pointed out that machines are now available to provide instruction in English without the aid of human teachers, and that large corporations are increasingly relying on technology to train their workforces.

"So what does this mean for teachers?" he asked. "It means the most successful teachers will be those who learn to use technology, instead of fighting it."

Mr. Cameron argued that teachers must take the initiative if they are to learn new skills.

"We have to do it ourselves, because the school districts and the governments aren't going to teach us how the hell to do it," he said.

For many participants, though, the most valuable role of the conference was to bring together teachers who had never used a computer with those who have successfully incorporated distance learning, computer-based instruction, and other electronic methods into their work.

The meeting also provided a forum for the N.E.A. to unveil a technology-based demonstration project aimed at helping schools achieve educational goals that would be unreachable without computers, modems, and other equipment.

Reaching 'Dreams'

The "Technology for Teaching" project, a collaborative effort of the N.E.A., the American Association of School Administrators, and the American Association of School Librarians, will allow 15 schools from Oregon to Iowa to apply technology to their efforts to realize stated educational "dreams."

The U.S. West Foundation provided a seed grant of \$80,000 to establish the project, which is designed to allow educators to make radical restructuring a reality and to demonstrate the power of technology to the public and the media.

The American Telephone and Telegraph Company, the International Business Machines Corporation, and U.S. West also are making contributions of services and equipment to the project.

Larry Rubin, the N.E.A.'s liaison to the project, said that several other companies had been impressed by the plans and had offered assistance during the conference.

The project got under way three years ago when William Dietz, a U.S. West official, approached Mr. Rubin with an offer to make a meaningful contribution to the improvement of education.

The cooperating organizations then encouraged schools to "Send Us Your Dream" of how students' education could be improved through the use of technology.

Only schools located in states that are served by U.S. West and whose personnel were affiliated with N.E.A.,

the school administrators' group, or the school librarians' group were eligible to apply.

Of the 110 responses, 14 schools were chosen.

Through a cooperative arrangement with a local telephone company, a 15th school, which was not a U.S. West customer, was allowed to join the project.

Linked To Learn

Mr. Rubin cited the case of two winning schools whose goals were complementary as an example of what the project aspires to achieve.

Staff members of the Arapahoe (Wyo.) School District, located on the remote Wind River Indian Reservation, said in their application that they felt their students were disadvantaged because opportunities to meet students of other races and socioeconomic backgrounds were severely limited on the reservation.

Teachers at Cornelia Elementary School in Edina, Minn., meanwhile, wrote in to say that their mostly white, upper-middle-class students also were isolated from ethnic and economic diversity.

As part of the project, the schools will be linked by computer and modem, allowing students to interact on a personal basis as well as to learn cooperatively.

"They're very excited about having their students study together," Mr. Rubin said. "And the only way they can do that is with technology."

Other projects focus largely on distance learning or the use of complex electronic databases.

Teachers from the various projects received some initial training here, and will spend the next 18 months hammering out the practical details of their proposals with help from the various partners in the endeavor.

In another technology-related an-

nouncement, the National Foundation for the Improvement of Education, an N.E.A. affiliate organization, released a document that outlines a series of effective technology-based teaching practices.

"Images in Action," a 36-page guide, contains 17 case studies and an explanation of five common themes that make the projects successful.

The guide describes, for example, "World 2000," a telecommunications project developed by Nancy Seamount, a high-school teacher in Juneau, Alaska. It links students in her classroom with their counterparts in the Babushinski District of Moscow.

Using classroom computers, students in Ms. Seamount's course on world health issues exchange data on such topics as the greenhouse effect, ozone depletion, and overpopulation in order to develop a collective vision of world health.

A 'Lost Generation'

Yet for all the optimism shared at the conference, union officials conceded that the majority of teachers have yet to realize the potential of microchips and satellites in education.

Gary D. Watts, senior director of the N.E.A.'s National Center for Innovation, said that one bright spot was that internal polls of the organization's membership indicate that teachers generally are not opposed to technology and that most have conquered the fear that they will be replaced by computers.

Nevertheless, he continued, the majority of the teaching force consists of a "lost generation" of educators who began teaching before the first microcomputers became available in the mid-1980's and remain chary of using them.

The purpose of the conference, Mr. Watts said, was to continue an internal dialogue about change within the organization as well as to "lend the N.E.A.'s weight to the technology movement."

TECHNOLOGY IN EDUCATION BRIEF



Recommendations of the Superintendent of Schools for the Application of Technology in Education

Shawnee Mission School District
February 19, 1990

Attachment 4
3/27/90
Sen. Eco. Devel.

ACKNOWLEDGEMENT

I want to acknowledge the invaluable contributions of staff members, parents, patrons, and students in the development of what I believe will prove to be a national model for the implementation of technology. A special word of appreciation is due the members of the Technology Committees who gave unselfishly of their time, energy, and professional expertise in creating a blueprint for the exemplary use of technology in education.

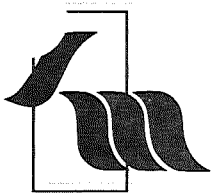
The recommendations outlined in this brief are the result of the extensive study and evaluation of the proposals by the committees and the subsequent unanimous support of the recommendations by the Associate Superintendents.

Rajiv Chopra

PREFACE

The financial crisis which faces our state has forced us to scale down the scope of our technology in education plan. Our financial commitment to the pilot phase has been reduced from \$5 million to no more than \$2.4 million in the pilot phase of the project. These funds have been accumulated since 1987 through concerted efforts in the management of the capital equipment fund. In light of the reduced availability of funds, the implementation timeframe has been extended from the original five to seven years to ten years. The flexibility of the plan will allow modifications for placing the project on a fast track for early completion should funds become available.

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Shawnee Mission Public Schools
Howard D. McEachen Administrative Center
7235 Antioch
Shawnee Mission, Kansas 66204
Telephone 913-831-1900

Raj K. Chopra
Superintendent

Educating for Life

February 19, 1990

Dear Board Members:

We have a solemn responsibility to prepare our students to face the challenges of tomorrow. If we are to do so, we cannot be bound by the limitations of today's methods and resources. The rapid pace of change is making current education obsolete in meeting the technological challenges that will face citizens of the 21st Century.

To adequately prepare our students for these technological challenges will require bold new initiatives. Citizens of the future must be masters of technology and its application to all aspects of life. Today's students must be taught with the "tools of the time": computers, software, interactive media (laser disc, cd-rom, etc.), and other developing technology.

We acknowledge that technology is a dynamic, constantly-changing resource. Some futurists insist that the technology to be available in the year 2000 has not yet been invented. We have taken all possible steps we can envision to allow our technology initiative enough flexibility to adapt to forthcoming technological innovations in hardware and software.

For financial reasons it might be tempting to delay its implementation. However, if we care about the students in our schools today, we cannot afford to wait! The cost of status quo is the loss of human potential. We must begin now to provide teachers and students with the "tools of the time" essential to prepare today's students for productive citizenship in the 21st Century.

In order that we might harness the power of technology to educate our students, a comprehensive study was initiated in October 1987 to determine how technology could be integrated into district programs and services. The results of this year long study formed the basis for a Request For Proposal from prospective vendors.

The solutions proposed by prospective vendors were analyzed by a knowledgeable group of administrators and teachers comprising the Technology Utilization Committee. The findings of this committee were submitted to the Executive Team for additional evaluation.

To further assure objectivity, I invited community computer specialists from two major corporations and a leading university to perform independent analyses of the proposed solutions. Their recommendations have provided the Executive Team and me an additional source of unbiased information.

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After considering the recommendations of the Technology Utilization Committee, the Executive Team, the independent consultants, and having made a thorough personal analysis of each of the bid proposals, I am recommending that International Business Machines (IBM) be approved as the vendor of choice for the implementation of technology in the Shawnee Mission School District.

In the past, school districts have been repeatedly criticized for ineffective planning and "knee-jerk" decision making when implementing technology. The plan I am presenting is specifically designed to avoid such shortsightedness. An emphasis on comprehensive long range planning is a unique feature. To accomplish this long range, innovative technology plan will require a multi-year allocation of capital outlay funds for computer hardware, computer software, intensive staff training, and other implementation expenses.

Sustained by the firm commitment of the Board of Education, the staff, and the community, this bold new initiative will provide essential educational opportunities for Shawnee Mission students, now and in the future.

Sincerely,

A handwritten signature in black ink that reads "Raj K. Chopra". The signature is written in a cursive, flowing style.

Raj K. Chopra
Superintendent of Schools

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Technology in Education Brief

IMPLEMENTATION PLAN AND VENDOR OF CHOICE

Background Information

Recognizing the obsolescence of the existing technology in the Shawnee Mission School District, the Superintendent of Schools in October 1987 commissioned a study to develop a plan to utilize the latest technological innovations to improve the quality of education, reduce paperwork for staff members, and lead Shawnee Mission students into the 21st Century.

The investigation confirmed that the technology currently available for administrative use was introduced in the 1970s with a minimal upgrade in 1983. Punched card systems are still a mainstay of district data processing. Teachers as well are limited in their instructional use of technology to these same obsolete computer systems supplemented by a limited number of aging standalone personal computers for student use.

As directed by the Superintendent the study outlined an innovative, prototypical plan for a top-to-bottom, fully integrated application of technology to education.

Subsequently, a Technology Utilization Committee consisting of knowledgeable teachers and administrators was formed to further define specific requirements in the following areas: Instructional Management, Student Records, Financial Applications, Human Resources, Information Management, and Facilities. Each committee member was assigned an area of responsibility in which to gather information to be used in constructing a Request for Proposal. As in the earlier study, a broad representation of district personnel participated in this information gathering phase.

A comprehensive Request for Proposal (RFP) was released to potential vendors on March 30, 1989. This document uniquely detailed technology requirements; specified extensive staff training; and advanced the visionary ideas of the District's staff about how technology can enhance learning, facilitate classroom management, and foster home-to-school communication. Prospective vendors were asked to submit their proposals for total hardware compatibility and software connectivity, which would provide immediate information access district wide.

Total-solution responses to this call for bid proposals were received from four large computer companies. An intensive review and analysis of these proposals was conducted by the Technology Utilization Committee under the direction of the Director of Management Information Services.

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In September 1989, IBM and Pentamation were selected as finalists and asked to demonstrate their hardware and software products to teachers, administrators, and support staff. Site-based evaluations were conducted by the Technology Utilization Committee in December 1989. Representative school districts using each vendor's products were visited. After examining all collected data, the Technology Utilization Committee submitted its findings to the Executive Team.

Following an analysis of vendors' solutions by staff members, community consultants, and the Executive Team, as well as the Superintendent's own personal evaluation, the following vendor recommendation and implementation plan is submitted:

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VENDOR OF CHOICE:

AFTER EXHAUSTIVE ANALYSIS OF THE IBM AND PENTAMATION INTEGRATED SOLUTIONS, IT IS RECOMMENDED THAT IBM BE SELECTED AS THE VENDOR OF CHOICE FOR THE SHAWNEE MISSION SCHOOL DISTRICT.

Rationale:

- A. **Cost Comparison:** The solution proposed by the IBM Corporation will cost \$5,054,884 less and provide equal or greater service. An additional cost benefit to the district would result from IBM's proposed annual operating expense which is \$761,964 less than Pentamation's. (Cost comparisons are based upon full implementation of the proposals. For specifics, see Cost Comparison in OTHER SUPPORTING INFORMATION.)
- B. **Support Services (Staff Training, Consultants, etc.):** IBM has extensive local support available and has included this service in their proposal. More specifically, the following support would be available:
 - a. **Project Management:** IBM will dedicate five on-site technology specialists for a three-year period. Pentamation proposed a single project manager.
 - b. **Software:** IBM will maintain a local technical support staff to assist in the joint development of application software and to facilitate project implementation. The Pentamation proposal offered no provision for local support.
- C. **Training:** IBM will provide 695 days of training. Pentamation proposed only 67 days. Each of these 695 days could consist of one or more classes, each with up to 20 trainees (teachers, administrators, and other support staff).
- D. **Network Capability:** IBM's token-ring network is superior to the Ethernet/AppleTalk network through speed, serviceability, flexibility, and number of computers and other devices supported by the network.
- E. **Administrative Software:** Although the current Pentamation administrative software was preferred by evaluators, both systems will require customization to meet district specifications. IBM's documented commitment to joint development/customization and the available resources to accomplish such customization was the deciding factor.
- F. **Instructional Software:** Neither vendor provided a total solution. However, the IBM solution allows us to select software from Jostens, IBM, and a multitude of other suppliers and to use software developed jointly by Shawnee Mission staff and IBM consultants. We can thus pick and choose the best software solutions for our students.

Josten's instructional software which runs on both IBM and Apple computers was rated highest among previewers. The district would need to consider the additional expenditures which might be incurred

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to make this software a part of the solution. Appropriate IBM software, coupled with such software, will provide an integrated solution. As implementation occurs, the plan will permit the addition of other compatible innovative software.

- G. Hardware: IBM hardware is compatible from personal computer to mainframe. Pentamation has used extensive hardware and software bridges to create compatibility between the Digital and Apple hardware. The speed of the IBM PS/2-25 runs at 8 MHz versus the Pentamation-proposed Apple IIGS which runs at 2.83 MHz. IBM provides a much faster response time for the user. The teacher and administrator computer work stations of both vendors run at approximately the same speed, however, the IBM solution provides color versus the monochrome display of the MacIntosh personal computer.
- H. Installation: Vendor proposals do not include costs of communication wiring, adding electrical services, room modifications, or purchasing appropriate furniture. A separate study by district personnel is under way to determine the estimated building modification costs at each pilot site.

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IMPLEMENTATION PLAN:

Use of Pilots:

PILOT SITES WILL BE UTILIZED FOR THE PURPOSE OF INITIATING AND EVALUATING MULTIPLE COMPUTER APPLICATIONS

Support for the implementation of pilots will include intensive staff training, the use of advisory committees for software evaluation and selection, and the expert assistance of the IBM technical support team.

The recommendations from these pilots sites will determine future implementation of both hardware and software.

These initial pilots will also enable us to more accurately predict the costs of installation (electrical service, communication wiring, computer furniture) and essential support services.

The pilot sites will be announced by March 15, 1990.

Timeline:

THE PLAN CAN BE IMPLEMENTED OVER A PERIOD OF TEN YEARS OR IN A SHORTER TIMEFRAME OF FIVE TO SEVEN YEARS CONTINGENT ON THE DOCUMENTED SUCCESS OF PILOT PROGRAMS AND THE AVAILABILITY OF RESOURCES.

In the spring of 1990 pilot elementary school, middle school, and high school sites will be established. A systematic evaluation of pilot operations will be used to determine future software and hardware acquisitions.

Following the anticipated establishment of the Indian Creek Technology Center in the summer of 1990, the installation of administrative software to support the pilot sites will begin. Training for these first installations will occur at Indian Creek, the pilot sites, or IBM's "Classroom of the Future" installation.

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ANTICIPATED BENEFITS/OUTCOMES OF THE APPLICATION OF TECHNOLOGY

No project of this magnitude should be undertaken without a clear understanding of the anticipated benefits and outcomes. Months of study and evaluation indicate that multiple benefits can be expected.

The implementation of technology should enable us to more effectively:

- Expand collaborative efforts by staff to meet students needs.
- Provide more meaningful and stimulating instruction.
- Individualize planning to meet each student's needs through customized programs.
- Enhance communication among teachers.
- Facilitate communication between home and school.
- Provide instantaneous access to records.
- Shorten response time for test interpretation.
- Expand learning options for students through access to innovative computer courseware.
- Increase time available for instruction.
- Decrease paper flow through use of electronic mail.
- Increase student access to the computer as a tool for learning.
- Deliver instruction to homebound students.
- Provide parents, teachers, and administrators better and more timely information about their student's progress, attendance, homework assignments, and related topics.
- Locate resources at teacher's fingertips:
 - Curriculum objectives
 - Lesson plans and supplemental activities
 - Instructional software
 - Library resources and other materials
 - Test item banks/test generation

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- Enhance automated recordkeeping:
 - Attendance records
 - Test results
 - Student grades
 - Diagnostic data
 - Student class schedules
 - Student demographic information

- Expand Instructional management processes for teachers, administrators, and support staff:
 - Word processing
 - Student testing
 - Software preview/selection
 - Courseware modification/augmentation
 - Electronic mail
 - Electronic bulletin board
 - School activities calendar
 - Personal calendar
 - Supply requisitions
 - Supply catalogs

- Provide additional resources available for principal/counselor/support staff:
 - Educational plans (IEP, Four-year High School enrollment plan, Career Path, etc.)
 - Master schedule
 - Transcripts
 - Financial/Budgetary data
 - Transportation/Demographic data
 - Inventories
 - Work orders for repair or maintenance
 - Personnel/Payroll/Substitute information

- Contribute other benefits:
 - Reduce teacher paperwork.
 - Create exciting and stimulating learning environments.
 - Augment teaching skills to meet a changing future.
 - Facilitate technology testing and demonstration.
 - Enable the district to access/utilize current and future technology.
 - Prepare our students to apply technology in meeting the fast changes occurring around them.

OTHER SUPPORTING INFORMATION

To assist the Board of Education in its decision making the following tables, charts, schedules, and other references are provided:

- Cost Comparisons
- Percent of Needs Met
- Ten Phase Implementation Schedule
- Number of New Personal Computers
- Technology Utilization Committee Members
- School Districts Visited/Interviewed

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COST COMPARISON

IBM

Bid: Centralized System	\$25,718,228
Less 5 Years of Maintenance	<u>\$ 2,762,170</u>
Sub-Total	\$22,956,058
Data Line Installation	<u>\$ 16,581</u>
Total Bid	\$22,972,639

Excludes: No Exclusions.

Support Expense:

Data lines:

Annually	5,532/12mo	\$ 66,384
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Maintenance (When fully implemented):

Hardware	\$ 142,000
Software	<u>\$ 85,000</u>
Total	\$ 227,000

Total Annual Support Expense \$ 293,384

Personal Computers Maintenance \$ 868,000
(IBM Quote)

NOTE: IBM offers a one year warranty on their equipment. Shawnee Mission will incur maintenance expense as the warranty period expires.

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COST COMPARISON

PENTAMATION:

Bid	Centralized System - (Maintenance Costs Excluded)	\$25,670,022
	*Other Costs:	
	Project Management (one person)	
	• Fee 6,750/36mo	243,000
	• Housing 500/36mo	18,000
	• Living 500/36mo	8,000
	• Local Travel 250/36mo	9,000
	• Air Fare 1,000/36mo	<u>36,000</u>
	Total	324,000
	Performance Bonds	770,000
	Custom Modifications	750,000
	Food Service POS System	308,430
	Transportation/Demographics	59,500
	Data Line Installation	85,405
	Standardized Stat. Program	10,552
	Bulletin Board	18,464
	Repair & Maintenance	<u>31,150</u>
	Total Bid	\$28,027,523

- Excludes:
- Firm price on conversion costs.
 - Travel and Expenses for Pentamation employees called on-site.

Support Expense:

Data lines:

Annually	\$30,405/12mo	\$ 364,860
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Maintenance (When fully implemented):

Hardware		\$ 389,456
Software		<u>\$ 301,032</u>
Total		\$ 690,488

Total Annual Support Expense	\$ 1,055,348
-------------------------------------	---------------------

Personal Computers Maintenance (Quote from Centrex 5% of Cost)	\$ 875,000
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NOTE: Apple Equipment has a 90 day warranty. DEC has no warranty period. Shawnee Mission will incur Maintenance Expense after warranties expire.

*Other Costs: These costs were added to the Pentamation Proposal to make a valid comparison of the vendors.

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EXPLANATION OF PERCENT OF NEEDS MET BY VENDOR

The chart opposite illustrates the results of the analysis performed on the proposals from the two final vendors. The RFP requested that each listed "need" be marked with a letter next to it indicating how the vendor's software met our need. A complete analysis by category of needs met was detailed in the preceding table.

Definitions of the letters used as indicators in the analysis follow:

Y - Yes, the software will perform this need.

P - Partially, the software will not completely perform this need.

V - Vendor will modify. The vendor will customize the software to perform this need.

N - No, the software will not perform this need.

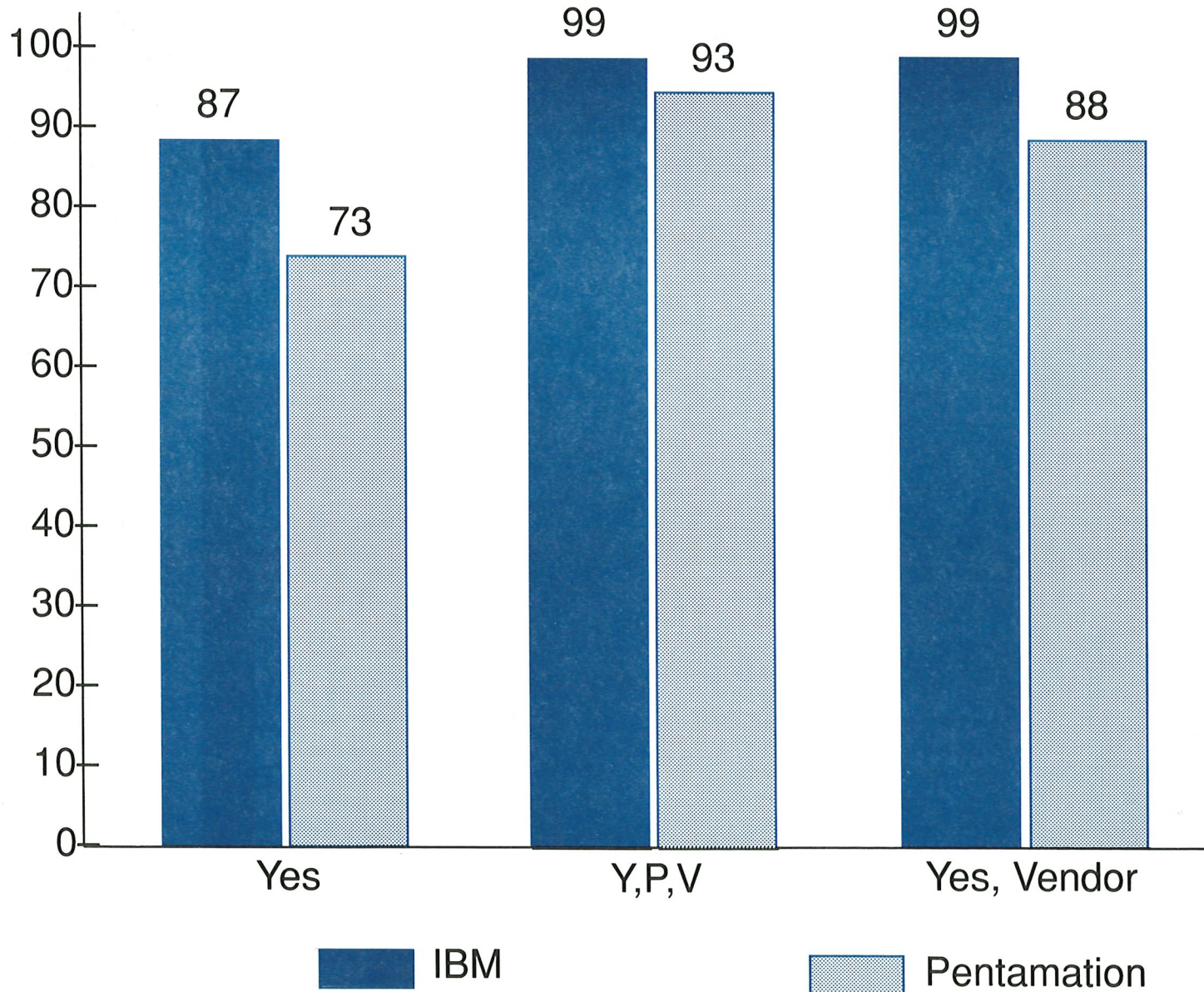
S - Shawnee Mission must modify. The vendor believes the modification is possible and that Shawnee Mission is capable of making the modification.

The last two categories are not included in the chart, since the emphasis was on how well the vendor met our needs.

Percent of Needs Met:

Indicators	IBM	Pentamation
Y	87	73
Y,P,V	99	93
Y,V	99	88

Percent of Needs Met Derived from RFP Proposal



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Proposed Ten Phase Implementation Schedule
Each Phase Is Contingent Upon Funding

<u>Phase I</u>	<u>Schools</u>	<u>*Cost</u>
Instructional Systems	5	1,328,201
Office Automation		105,598
Financial Management		19,160
Budget Preparation		17,500
Payroll/HR		104,850
Tech Center - Support		<u>769,924</u>
		2,345,233
 <u>Phase II</u>		
Library Management	55	2,599,552
Food Service Central		<u>75,000</u>
		2,674,552
 <u>Phase III</u>		
Instructional Systems	5	1,645,372
Standardized Testing		10,552
Student Management including Special Education		379,138
Transportation/Demo		50,575
Tech Center - Support		<u>380,265</u>
		2,465,902
 <u>Phase IV</u>		
Instructional Systems	5	1,645,372
Food Service-POS	28	300,256
Warehouse/Inventory		44,818
Energy Management		5,490
Fixed Assets		<u>38,508</u>
		2,034,444
 <u>Phase V</u>		
Instructional Systems	5	1,645,372
Food Service-POS	27	289,533
Repair & Maintenance		**
Facilities Planning		**
		<u>1,934,905</u>
 <u>Instructional Systems:</u>		
Phase VI	7	2,303,521
Phase VII	7	2,303,521
Phase VIII	7	2,303,521
Phase IX	7	2,303,521
Phase X	7	2,303,521
 All Phases		 22,972,639

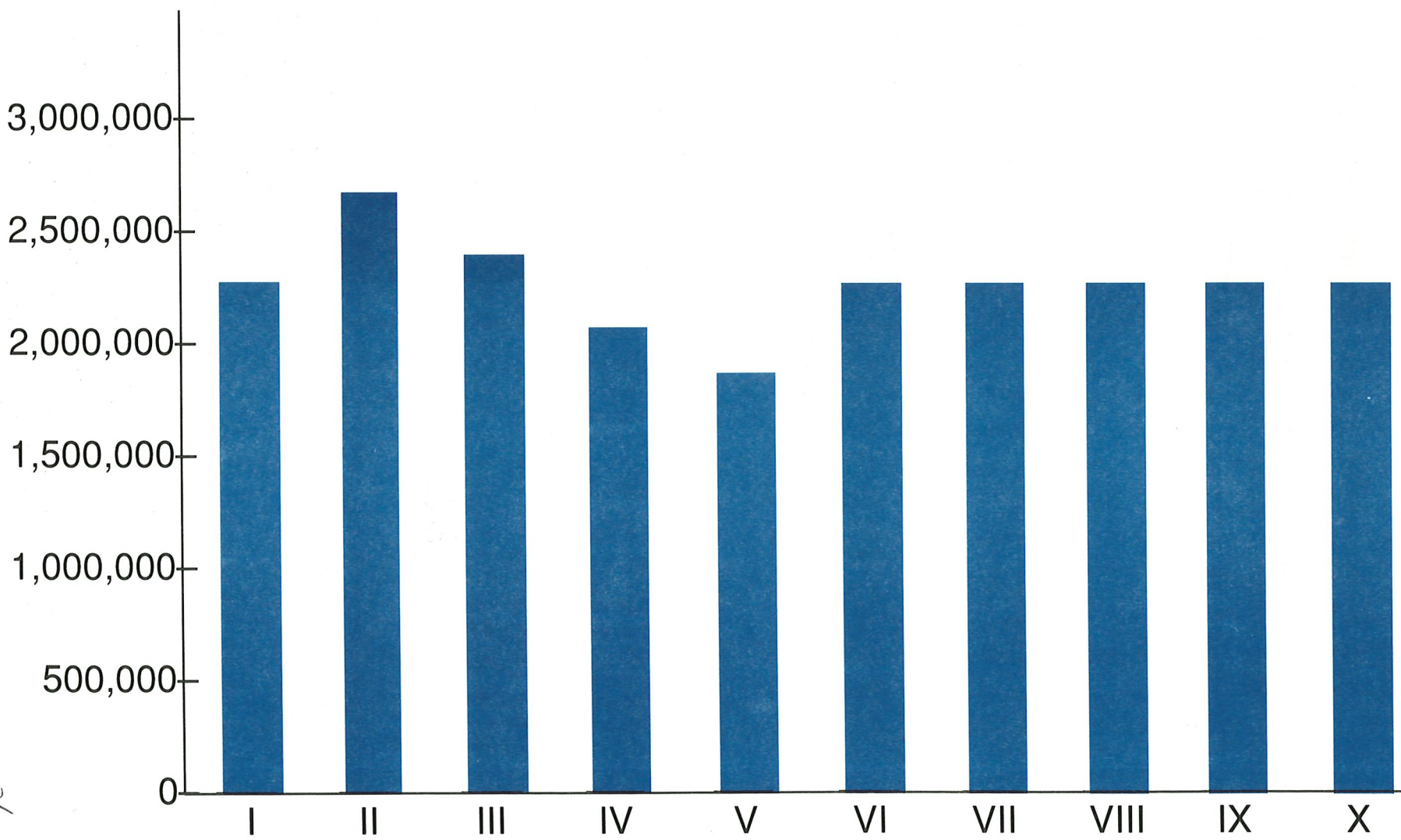
* Costs are estimates and reflect expected cost reductions from Joint Development Discounts proposed by IBM.

Costs do not include electrical, communication wiring, room modification, or furniture. A study is under way to determine these building modification costs at each pilot site.

** Costs were included in the Fixed Asset System.

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TECHNOLOGY PROJECT Cost by Implementation Phase



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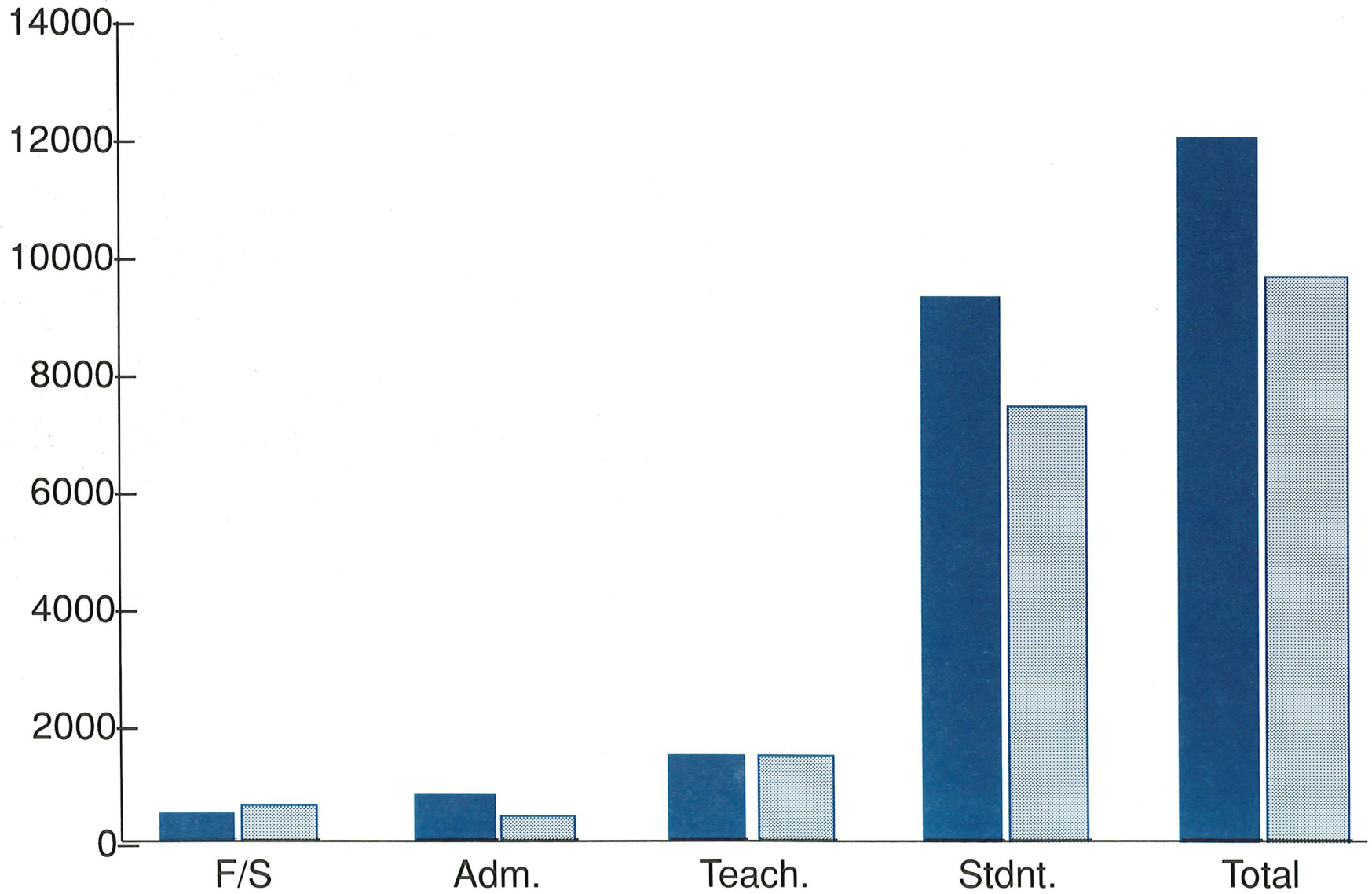
EXPLANATION OF PERSONAL COMPUTER CHART

This chart shows the number of new personal computers proposed. Pentamation/Apple reduced the number of Apple IIGS computers they proposed by the number of Apple IIe computers the district presently owns.

F/S	Files Servers proposed: IBM - 220 Pentamation - 330
Adm.	Personal computers for administrators and office personnel. IBM - 738 Pentatmation - 251
Teach.	The number of personal computers requested for teachers were specified by the district in the RFP at 1,675.
Stdnt.	Student personal computers. IBM - 9,410 Pentamation - 7,542
Total	The total number of new personal computers proposed. IBM - 12,043 Pentamation - 9,798

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Number of New Personal Computers Included in Response to RFP



IBM 12043, Pentamation 9798

IBM

Pentamation

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TECHNOLOGY UTILIZATION COMMITTEE

A. Lee Petros, Director of Management Information Services,
Committee Chairman
McEachen

Jerry Belshe, Math Teacher
Indian Woods Middle School

Pat Bockelman, Math Lab Coordinator
Shawnee Mission North High School

Bob Carter, Director, Elementary/O&M Personnel Services
McEachen

Mary Fugate, Principal
Trailridge Middle School

Jim Giffey, Materials Manager
McEachen

Wayne Hickox, Director, Educational Media Services
Mohawk

Corky Jacobs, Associate Principal
Shawnee Mission East High School

Connie Welsh, Principal
Brookridge Elementary School

Bev White, Director, Human Resource Development
McEachen

Bob Winkler, Fourth Grade Teacher
Oak Park Elementary School

EX OFFICIO MEMBERS:

Lyle Stenfors, Associate Superintendent,
Management Services
McEachen

Donald Wilson, Associate Superintendent,
Curriculum & Instruction
McEachen

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SCHOOL DISTRICTS VISITED/INTERVIEWED

Anne Arundel County Public Schools
Annapolis, Maryland

Brevard School District
Melbourne, Fl.

Broward County School District
Ft. Lauderdale, Fl.

Burlington School District
Burlington, NC.

Calgory Board of Education
Calgory, Canada

Central Bucks School District
Doylestown, Pa.

Colorado Springs School District
Colorado Springs, Colorado

Johnson County Library
Shawnee Mission, Ks.

Manhattan School District
Manhattan, Kansas

Mesa School District
Mesa, Az.

Mill Creek School District
Erie, Pa.

Milwaukee Public Schools
Milwaukee, WI.

Montgomery County Public Schools
Rockville, Md.

Philadelphia School District
Philadelphia, Pa.

Plano ISD
Plano, Texas

Port Arthur School District
Port Arthur, Texas

Prince George County School District
Upper Marlboro, Md.

Richardson School District
Richardson, Tx.

Rockwood School District
Suburban St. Louis, Mo.

Springfield School District
Springfield, Mo.

Vermillion Public Schools
Vermillion, OH.

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A FINAL WORD

The application of technology to education has been exhaustively studied over the past 3 years. The recommendations that have been proposed have one overriding purpose: providing the best possible educational opportunities for students. The plan proposes the wise use of available funds and provides flexibility for future implementation after the results of the pilots are known. IBM's commitment of \$406,000 in equipment and related products reduces the financial impact the district will incur the first year.

Due to the complexity of this project, it was anticipated that many questions would arise. In an effort to provide a clear picture of this project the following questions and answers are presented.

QUESTIONS AND ANSWERS ABOUT THE TECHNOLOGY PLAN:

Q. How many new personal computers are included in the proposal?

A.	IBM	Pentamation
File Servers	220	330
Administrators/Support Staff	738	251
Teachers	1675	1675
Students	<u>9410</u>	<u>7542</u>
Total	12043	9798

Q. Why does IBM propose 110 fewer File Servers?

A. The Token-Ring network proposed by IBM runs at a speed of 4 million bits of data per second compared to Apple's Local/Talk which runs at 234 thousand bits of data per second. The faster IBM transmission speed enables a greater number of users to access each File Server without degrading response time.

Q. Why has IBM proposed additional Personal Computers for administrators/support staff?

A. IBM proposes the extensive use of multi-function personal computers which gives administrators/support staff access to all available classroom and administrative systems. Unlike terminals, the availability of personal computers will facilitate the preview of new and the full utilization of existing software.

Q. What percentage of the computer software, hardware, and support requirements specified in the Request for Proposal (RFP) were met by each Vendor?

A. Including the specifications answered by a "Yes" and "Vendor Will Modify" the following percentages were calculated:
 IBM - 98.95%
 Pentamation - 88.36%

Q. Why is there a difference in the number of student personal computers proposed?

A. IBM proposed all new technology for the classroom (12,043) at a lower cost. Pentamation/Apple proposed fewer new computers (9,798) while relying on the continued use of the District's aging Apple Iles (1,412).

Q. What advantage is there to having all new personal computers in the classroom?

A. It provides the teacher a large selection of state-of-the-art software.

Q. What will happen to the District's existing personal computers and software?

A. The technology plan calls for the evaluation and proration/reallocation of existing computers to the areas of most effective use to maintain current levels of service. The software that is used on these computers will still be available for use by the teachers.

Q. How much training for teachers, administrators, and support staff is included in the proposal?

A. IBM has included 695 days of training. Pentamation included 67 days of training. The staff training program plan envisions multiple formats and time frames for using the training resources that will be made available.

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- Q. How were pilot sites selected?
A. Interested schools were asked to respond to a questionnaire indicating their willingness to participate in this program. Interviews were conducted with each applicant to make the final selection of the pilot sites.
- Q. If my school is not one of the pilots, how will my current needs be met?
A. Existing hardware and software will continue to be used. Updates critical to instruction will be made where appropriate.
- Q. If I am an Apple computer user now, will I need additional training?
A. Yes. However, this training will build upon your current level of expertise, focusing on the use of new software.
- Q. Will the money required for technology reduce current levels of funding for teachers' salaries and instructional supplies?
A. No. Expenditures for the technology upgrades will be budgeted from the capital outlay fund.
- Q. Will the money required for technology reduce current levels of funding for equipment and building maintenance?
A. No. Equipment, equipment maintenance, and building maintenance are projected to continue at the current level with adjustments for inflation.
- Q. Who participated in the technology studies?
A. This investigation included the input of more than 1500 students, staff, and community representatives.
- Q. How much time will the students be spending using the computer?
A. The amount of time students will use the computer will vary greatly depending on availability of software and hardware, and appropriateness to the course objectives.
- Q. Will boredom be a factor as it has been in present day remedial computer use?
A. No. The proposed software will go beyond the drill and practice levels which have seemed repetitive and "boring". Additionally, the colors and graphics available with technology today will keep the student's interest.
- Q. Do we have personnel capable of maintaining the hardware?
A. Yes. Technical support groups are being trained from existing personnel. Initial pilot implementations will utilize significant vendor resources as well.
- Q. Will the basic skills program be programmed on the computer?
A. Yes. Customization of program or course objectives, test banks, content material, and activities will enhance the current basic skills program.
- Q. Will this be a remedial, standard, or enhancement instructional tool?
A. It will assist all areas of instruction, remedial, standard, or enhancement and will be a valuable tool for all levels.
- Q. IBM is well known for its business expertise while Apple is perceived to be more knowledgeable about education. Doesn't this mean that Apple would offer more assistance in educational applications?
A. Apple sells the hardware not the software. There is a multitude of software available for both Apple and IBM. IBM has proposed an extensive amount of support and training which Pentamation/Apple did not match.

- Q. Do we have personnel capable of programming some of our needs?
A. Yes, with proper training.
- Q. Aren't Apples easier to use than IBM PCs?
A. No. It is the application software that makes a personal computer appear easier for the user to operate. There is a difference in the operating system, but the student will rarely, if ever, see it. They will only see the instructional software and a selection menu.
- Q. Will parents have to buy a "networked" computer?
A. No. However, as technology applications expand, remote access to the school technology system may be helpful to both students and parents. The type of computer which a parent should buy would depend on the software they are planning to use.
- Q. Would the district buy other than IBM computers for special needs such as desktop publishing?
A. Each need will be addressed individually. Where other hardware or software applications are more functionally suitable to the task, the District will reserve the flexibility to make such decisions.
- Q. Will children need keyboard skills to use the computers?
A. Not in the beginning. The instructional software will help students develop these skills.
- Q. How will we keep up with repairs?
A. The computers have a one year warranty with the vendor. During this time a feasibility study for in-house maintenance will be completed and a recommendation will be made at that time.
- Q. Do computers replace teachers or textbooks?
A. Computers in the classroom are used as a tool to aid teachers. It is possible a software program could replace instructional books and materials currently in use. The entire encyclopedia has been placed on CD-ROM disks for access by computers. However, texts would still be used for most courses for some time.
- Q. How will computers make the teachers work-load easier?
A. An extensive recitation of benefits appears in the section entitled "Anticipated Benefits/Outcomes of the Application of Technology".
- Q. How many students will use one computer?
A. Our goal is to provide personal computers in the schools based upon ratios of students to personal computers. The ratios are: Elementary Schools 3:1, Middle Schools 4:1, High Schools 5:1. Whether there will be more than one student at a personal computer will depend on the teaching method employed by the teacher.
- Q. How will teachers work with students through the computer?
A. The multitude of ways in which teachers can utilize computers appears in the section entitled "Anticipated Benefits/Outcomes of the Application of Technology".
- Q. Will each classroom of the model schools have computers?
A. Only in the elementary schools. In the high schools and middle schools computers will be placed either in a grade level or in a specific department in the first phase.

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- Q. Should we postpone the technology implementation?
- A. No. We are falling behind other lighthouse school districts in the automation of instructional and administrative processes. Teachers, administrators, and the community are primed for the plan that will address district needs. The computer system being used for the management systems was purchased in 1983 and is in dire need of replacement. Some of the equipment and software dates back to 1975. Spare parts for the equipment are becoming difficult to obtain and often must be cannibalized from systems discarded by other districts or businesses. The potential for a breakdown of the system is real and could create serious management problems from issuing payroll checks to student scheduling.
- Q. What is unique about this technology project?
- A. The technology in education plan envisions a totally integrated solution for linking computer processes district wide. This is unique among other educational plans in that it should ensure state-of-the-art automation well into the next century. In previous years, little or no attention was paid to the integration of business and instructional operations. Business Office equipment was purchased with business functions in mind. Stand alone personal computers were purchased for instructional functions. The proposed plan envisions an integrated cross operational system.
- Q. What is the "Total Integrated Solution"?
- A. This concept provides access to any instructional or management information from any location within the District. It also provides the ability for individuals to share information instantaneously. The accomplishment of this plan required the acquisition of hardware which is compatible from personal computer to mainframe and the use of software that passes data from system to system.
- Q. How much will it cost if only the computer in the Business Office for the business application is updated.
- A. It will cost at least \$1 million. The District business, administrative, and instructional operations would continue to function separately without the benefits of an integrated system. By adopting the technology plan, with an additional expenditure of approximately \$1.4 million, up to five pilot schools can be initiated. The IBM Corporation will provide \$406,000 in equipment during the pilot phase to foster joint development. In subsequent phases IBM will contribute an additional \$3.6 million.
- Q. Why will IBM contribute towards the instructional pilot phase?
- A. The IBM Corporation is enthusiastic about the integrated technology concept and the opportunity to become a partner in a national model for the use of developing technology in schools.

TESTIMONY HB 2179

Dr. Tom Hawk
Director Secondary Curriculum
Manhattan/Ogden USD #383

It is my pleasure to support HB 2179 and to commend the Senate Economic Development Committee for their leadership in bringing the issue of funding technology in the schools to the attention of the legislature.

We have all heard many concerned educators, business people, and governmental officials remind us that our most valuable resource for economic development in this state is our young people and their education and training to become productive citizens. As we look at the rapid changes occurring in our business and production economies nationwide, we are struck with the urgent need to prepare our young people for these ever-increasing "high tech" jobs.

It has been my privilege this spring to attend two important technology meetings--one sponsored by IBM and the other by Apple. The theme for both of these meetings was the urgent need to restructure education with technology so that our society can compete in a global economy. We are embarking on an age of transformational education, education that will literally change the way we work, learn, and think. The explosion of information has made the retrieval and manipulation of data a survival skill for most if not all of the jobs in the 21st century.

One of the exciting experiences of my recent, reincarnated technology life, was the chance to sit down with an information service, Prodigy, and sort through all of the information data bases. I really became a kid again. First, I read the news headline stories, then the sports, and then worked into the games and bulletin boards. I even checked out the information on how to cheaply buy a new computer! My conclusion in the fun hour was that my own children desperately needed to experience this kind of information-data-base search and retrieval to be literate in the world both now and especially the one in which they will find employment.

The bad news for me was that my school district, one in which I carry much of the responsibility for purchasing and installing computers, did not have enough machines, phone lines, or budget to implement this program so my children could benefit. I was so alarmed at how long it might take me to get this into the school that I went out and bought a computer, modem, and Prodigy software so they could get that experience at home. Then it occurred to me--what about the other kids who don't

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Sen. Eco. Devel.

have a dad who is willing to go, or can go, into debt or one who has not seen the light of computer salvation.

I have deep and grave concern for our financial ability at the local level to get this technology experience to all children. Yes, there are a few great programs in local districts that touch some children in significant ways; but most do not come close to getting the degree of technology that can really make a difference in student learning.

Before I speak to the more specific parts of the bill that I believe can greatly affect education, I want to expand my notion about what we are talking about when using the phase technology. My initial comments on Prodigy might lead you to think that it is just computers and data bases. It is much more and the power of these new technologies for education is phenomenal. Take for example the use of multi-media presentation using a CD-Rom or laser disk hooked to a computer. This gives full motion video and the ability to explore subject matter in such a way that interest, creativity and motivation on the students part is remarkable. Not only do students become consumers of knowledge, but they are able to create knowledge and use the technology to expand beyond simple facts and exercises. Simulations are another possibility that expand both the rate and motivation for learning. We only need to look at the success of Desert Storm and the simulation learning used by the military to observe the power of this learning tool.

What should our goal be for learning in this state? I think it should be one of creating a learning society where every student is learning, any topic, any time, any where. To accomplish this we must have pervasive technology in the schools.

The bill, 2179, provides for local boards of education with the authority to levy two mills for the purpose of implementing technology in the local school district. In my district's case, this is a significant amount of money to move us in the direction of attaining our initial goal of 30 minutes of computer time per day per child. That goal is merely an introduction goal that is quite difficult for us to financially obtain. To accomplish the kinds of instruction and learning mentioned earlier will take much more of a financial commitment.

Why is it so difficult for us to move in this direction as funding currently stands? In our case, a fourth enrollment category district with increasing enrollment, funds are tight in both the general fund and the capital outlay fund. The costs of personnel and the costs for maintaining buildings and existing equipment eats up all of the resources. What is left is going for housing the increased student enrollments. There is no extra money to buy the kinds of technology to

reach all students to the degree that we can to really restructure classrooms and to make the difference in the outcome performance and knowledge levels of the students. There is no question for me that teachers are working hard, very hard, but they do not have the tools to make the changes necessary. Well meaning and progressive boards of education do not have the funding capability to offer the support of the community for these critical changes.

In closing, I would like to emphasize that it is my belief that this bill has the potential to start a significant transformation of education in Kansas. We cannot make the key changes in the way we instruct children without the tools of technology. That technology is not the only piece necessary for the the job ahead, but it is such an important piece that without it our efforts for significant improvement and restructuring will fall short. If we fall short, so do our students, and in the end the economic health and vitality of this great state.



Testimony on H.B. 2179
before the
Senate Committee on Economic Development

by

John W. Koepke, Executive Director
Kansas Association of School Boards

March 27, 1991

Mr, Chairman and members of the Committee, we appreciate the opportunity to appear before you on behalf of the member boards of education of the Kansas Association of School Boards with regard to H.B. 2179. We applaud the efforts of the legislature to expand the availability of technology education programs in Kansas school districts.

Kansas school districts have long been aware of the enhancement of their educational programs that can be gained through the utilization of technology and they have been in the forefront nationally in seeking to bring these benefits to their students. Several years ago, the National School Boards Association created the Institute for the Transfer of Technology to Education within its service structure. Of the first 100 school districts in the nation to sign up for this information and sharing service, 22 were from Kansas.

Kansas efforts in technology education have ranged from the use of computer instruction to the offering of classes by satellite and interactive video. An example of the use of the interactive video technology was used earlier by the House and Senate Education Committees to conduct their hearings in cooperation with participating school districts. Kansas State University, through the federal Star Schools Grant Program, has created a state of the art Education Communications Center on the Manhattan campus. This Center is producing foreign language classes that are being utilized by schools throughout the nation via satellite.

Kansas school districts are eager to expand their utilization of the new education technologies which are readily available. Their chief restriction, particularly in recent years, has been a lack of resources. We would suggest, therefore, that the thrust of H.B. 2179 be changed to an expansion of the general budget authority of Kansas school districts. The approach presently contained in H.B. 2179 would produce an uneven effect, since a two mill levy would produce widely varying amounts of assistance based on the property wealth of the school districts involved. The present definition of technology education in the bill would also restrict the use of this new revenue to computer related equipment.

Again, we appreciate the interest of the Committee in seeking to expand the availability of educational technology in Kansas school districts and we pledge our assistance to achieving this desirable goal. Thank you for the opportunity to express our views to the Committee and I would be happy to attempt to answer any questions.

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BLUE VALLEY U.S.D. 229
Overland Park, Kansas
March 27, 1991

Mr. Chairman and Members of the Committee:

My name is Helen Stephens, representing Blue Valley
U.S.D. 229.

We support passage of HB 2179.

The future of our children will be determined by their
ability to integrate themselves into and cope with a
modern lifestyle based on electronic technology. This
technology needs to be introduced and taught to our
children throughout their school years, from
kindergarten through 12th.

Passage of this legislation will ensure each school
district a sound foundation for introducing this
technology, not only to its students, but to teachers.

We urge your favorable consideration of HB 2179.

Thank you for the opportunity to present this
statement.

Attachment 7
3/27/91
Sen. Eco. Devel.