

APPROVED
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Rockville, Maryland
May 26, 1983

The Board of Education of Montgomery County met in special session at the Educational Services Center, Rockville, Maryland, on Thursday, May 23, 1983, at 8 p.m.

ROLL CALL

Present: Mr. Blair G. Ewing, President in the
Chair
Mrs. Marilyn J. Praisner
Mrs. Odessa M. Shannon

Absent: Dr. James E. Cronin
Dr. Marian L. Greenblatt
Mr. Kurt Hirsch
Mrs. Suzanne Peyser
Dr. Robert E. Shoenberg

Others Present: Dr. Harry Pitt, Deputy Superintendent,
acting in the absence of the
superintendent
Dr. Robert S. Shaffner, Executive
Assistant
Mr. Peter Robertson, Board Member-elect

Re: Computer-related Instruction

Dr. Lois Martin, associate superintendent for instruction and program development, recalled that computer-related instruction in the Montgomery County Public Schools had started in the math area as computer-assisted instruction. In 1978 they had purchased microcomputers for the senior high schools and had started buying PET computers for gifted and talented students in the elementary schools, but had found they were good for all students. Since March 8, 1983, they had been working on a draft policy for Board adoption. She requested Board reactions to the proposed policy and explained that a large number of people from government, business, and higher education had reacted to the staff's proposal.

Ms. Beverly Sangston, coordinator of computer-related instruction, reported that in 1968 they had started with instructional uses of the computer in K-8 mathematics. At that time they started vocational computer processing courses. The senior high schools have three or four microcomputers for use in mathematics and in computer literacy. Since that time computer use in the public schools had expanded rapidly and now they had the opportunity for all students to have knowledge of the computer. She said that education in the 80's demand they provide students with computer related knowledge and skills. Their goal was to develop a positive attitude toward the use of the computer, and they believe the goal could be achieved through the development of county-wide curriculum. The use of the computer should be integrated throughout all the disciplines. They had developed a project funded by the National Science Foundation with the goal of providing a K-8

computer literacy guide to be used nationally. There were two pilot schools, Travilah and Redland. At present they had K-8 units in computer literacy and science. As a subset of these units they had developed a unit for each grade level piloted in 36 schools.

These units focused on the functional use of computers. The units were successful and would be available to all schools in September. In eighth grade they were working on a programming unit in 18 schools. At the senior high school level they had computer math, microcomputers in the media centers, and computers in the science programs in 12 high schools. They would be piloting three courses in nine high schools in a computer lab.

In regard to equipment, Ms. Sangston said they had one microcomputer to 200 or 300 students which was minimal. They hoped to improve that this year because 60 PET computers had been purchased. She said that there was a tremendous demand for teacher training, and the in-service courses had been overbooked. They hoped to have some additional courses for teachers next year, and they were looking at the development of some one credit courses in this area. By the third year they hoped to have a countywide program with a computer center in all high schools.

Dr. Frank Carricato, director of the Department of Career and Vocational Education, stated that they were teaching vocational data processing at Blair and Einstein. These programs would close and transfer to the Edison Career Center where over 100 applications had been received for this course. In addition, they were offering word processing which was fully enrolled. They were also looking at the use of microcomputers in their hotel, warehousing, and food services programs. They had vocational support teams in seven high schools and were looking toward the purchase of microcomputers for these teams. They were also looking at the use of federal funds to provide staff training. He reported that Hewlett Packard was providing training for 60 business teachers and would have a second course for vocational teachers.

Dr. Leonard Orloff, director of the Department of Staff Development, indicated that in September, 1982, computer training became his department's top priority. In 1980 they spent \$5,000 for this training, in 1981 they spent \$10,000, and in 1982 \$20,000. In September, 1982 750 people attempted to sign up for three courses. They were able to accept 350 in credit courses. This year they would attempt to give space available for all applications.

Mrs. Fran Dean, director of the Department of Instructional Resources, explained that her department was responsible for the maintenance of the microcomputers after the one-year warranty expired. They were also responsible for evaluating the software to be purchased through the media center accounts. She reported that all of their Apple II computers were able to dialogue with their direct line and with each other.

Dr. Pitt indicated that the County Council in the capital budget did

provide funding for the hardware. In the process, MCPS had provide them with a long-range list of what was needed and why.

Mrs. Shannon commented that she was very pleased to see there was a much more coordinated effort in this area than she had thought. Mrs. Shannon asked whether they were piloting in 36 schools, Mrs. Sangston explained they were in two and in the second semester would be in 36 schools working with different grade level objectives. In the senior high school the courses would be offered in nine high schools. Mrs. Shannon said that in regard to staff development, in some instances the children knew more than the teachers. She inquired about skill level in the courses. Ms. Sangston explained that the first two courses built confidence in the teachers to use computers. The courses included a general awareness of what computers were and how they worked. The third course was advanced basic programming which was to prepare teachers to teach the second course in the high school. She indicated that one half of the coursework did prepare teachers to teach the eighth grade programming unit.

Mrs. Praisner asked whether they had done a study on the minimum number of computers required for students. Ms. Sangston felt that one computer for every 200 students was the minimum in elementary schools. Ultimately they would like one computer in every class. Mrs. Praisner asked where the eighth grade unit would be taught, and Ms. Sangston replied math or science. The unit required three weeks of class time; however, some schools had been piloting this at the seventh grade level for students going into algebra. It was their hope that this would be presented to all students.

Mrs. Shannon inquired about the impact on students who could not get to Edison. Dr. Carricato replied that this year they would maintain the status quo of enrollment, but in future years they would be making it easier for more students to get in. They were not looking at the need to open a second program for Area 2 and 3. He pointed out that the equipment was too expensive to disperse it to all of the comprehensive high schools. The other possibility was to extend the hours for Edison. They had discussed with Adult Education the possibility of their using the computer in September. Mrs. Shannon asked whether the teachers who taught the course were fully trained, and Dr. Carricato replied that they were.

Mr. Russell Kirsch, National Bureau of Standards, stated that Dr. Martin had started a successful program with them. A number of employees were going into the schools to talk about science. He had taught from fourth to twelfth grade, especially in the area of computer science. From his own 30 years in computer science, he believed that the program the MCPS staff had put together was outstanding. However, he was concerned that it was too easy to identify computers with computing machines, and the concept of the program was much broader than they might think. This area went into language arts, fine arts, and the humanities, not in the sense of computer tools, but because of the fundamental questions that were raised. He thought that computer leadership should not necessarily

be in the hands of the scientists but perhaps in the hands of language arts or even fine arts people.

Mrs. Zoe Lefkowitz, MCCPTA, explained that the courses offered by EPI were started because parents said there were not enough computer courses. She said that they would like to phase themselves out of this business and have MCPS take over. There already existed an inequity because some children did have access to computers while others did not. She said that some schools had only one computer and, in certain cases, they could not depend on the PTAs to buy more computers. Dr. Martin noted that one successful effort had been the North Chevy Chase center where children came in to use the equipment.

Dr. Martin pointed out that Mr. Don Mowbray from the Chamber of Commerce was present about the adopt-a-school program. Mr. Robert Weise of Watkins Johnson was also present. Watkins Johnson had offered help in training teachers and in the scientist-in-residence program.

Ms. Mary Ann Evan, PEPCO, said that they had reviewed the materials and thought staff had done a fine job. She indicated that PEPCO was very serious about supporting the program in a number of ways. One of the best things they could offer was practical experience in a large business and placements for students in work experience programs. They were also looking into the possibilities of internships for teachers during the summer. They would also be pleased to offer their staff to work with staff development.

Mr. Mowbray reported that educators-in-industry was in its second year and was sponsored by General Electric. Mr. Ewing remarked that this was a wonderful program and a benefit to MCPS.

Mrs. Lefkowitz said that her own experience as a supporting services employee led her to suggest MCPS needed to look at training of staff such as aides and secretaries. These people ran the offices and kept the individual schools going. She tried to enroll in an MCPS course and finally went outside for training. Dr. Orloff explained that they had plans for training and had set aside funds for that purpose. The problem was getting the equipment to hold a class. At present they were using equipment at Gaithersburg High School.

A parent in the audience said he was interested in what was planned for instruction and thought the emphasis was on practical applications. He thought there was a certain ambiguity about programming and word processing, because, for example, automatic programming was coming along the line. He felt they needed to emphasize the conceptual growth of the children and look to the future because a decade ahead the technology might be vastly different. He reported that his four-year-old child was already using the computer for simple computation skills. He wanted to know what the curriculum would look like and what the child should be doing with the home computer to enhance what he had learned in the classroom. He wanted to be able to teach the kinds of

skills that would make use of data retrieval, and he felt they had to address the question of the kind of information they would provide to parents because parents did want to enrich the lives of their children in the home setting.

Dr. Martin stated that they had had staff discussions on this. Her overall reaction was that his comments underscored what Mrs. Lefkowitz had said about the equity issue because some parents were not so advantaged as to have a computer in the home. Mr. Marshall Lasky, B-CC PTSA, stated that he had been in computers for 20 years. He had a son in the eighth grade, and while they had had computer terminals in the home since his son was a baby, they had insured that he had nothing to do with computers. He said that there was the problem of what programming would be used for, computer illiteracy and poor thought training. He had worked with high school interns from other school systems who had had free access to terminals from elementary schools on and he had seen a great number of people in business who were very facile in doing things ineffectively on the computer. He pointed out that most people had small calculators, used them for simple calculations, and did not know how to use the calculator effectively. He pointed out that computers were teaching people how not to use English. He said the key was that the computer not be taught as a computer but as a tool in the curriculum. In his son's eighth grade class, he had seen a poor use of the computer in math. It was being used as a substitute for teaching math reasoning, mindlessly working problems by brute force.

Mr. Don Fork, Montgomery College, reported that he had had the opportunity to participate in Pennsylvania's efforts in this area. His recommendation was that MCPS continue to do what it was doing and continue to be imaginative. He hoped there would be some discussion about integrating computers with other forms of media. He did agree that the focus should be on learning and the process of learning. Mr. Kirsch said that the French had experimented in using computers for education, and he was impressed by the energy with which they failed. They assigned two children to a computer, and the level of education was mundane and pedestrian. However, in an art center in Paris a group of musicians were using the computer to do musical composition and as a tool to get on with their work.

Carol Muscara, MCPS, commented that she had visited a biology classroom in Wootton High School where students were using an Apple computer. The students had spent hours collecting data on trees and calculating the dimensions of the trees. The students realized they could not get their calculations done, and one student wrote a program for the computer to do their calculations in about 10 seconds. She said that the computer was a powerful tool to do mundane work to permit them to get on with the business of science and discovery.

Mr. Ewing stated that the comments were very helpful. He explained that the meeting was being taped, and the tape would be available to the staff and public.

Ms. Sangston reviewed the proposed policy and explained the rationale behind each section. Dr. Martin said they had just received Mrs. Shannon's proposed changes. Mrs. Shannon explained that these were suggestions. However, one area missing in the policy was some sort of time phasing for implementation. Dr. Martin replied that their thinking was five years. Mrs. Shannon also thought they should have interim goals. Mrs. Praisner suggested this could be accommodated by including a plan to support the policy. Dr. Martin explained that their budget showed exactly what was planned and funded for in FY84. She said that the other issue of concern was the rapid change in technology. Mr. John Dealey, the chairman of the governor's commission, had pointed out the pitfalls of saying they knew exactly what they would be doing five years from now. He had said don't worry about the maintenance of the equipment because it will probably be obsolete by the time it needed repair.

Mrs. Shannon suggested that it might be cheaper to rent equipment rather than buy it. Mr. Richard, Fazakerley, associate superintendent for supportive services, remarked that no one knew what would be the state of the art when children in school graduated from high school. Mrs. Shannon commented that for that reason children should learn a concept rather than a piece of equipment.

Dr. Pitt recalled that they had debated about adding onto the mainframe of the computer or going in the direction of microcomputers. They felt by going with microcomputers they would have flexibility and be using relatively low cost equipment. However, they had not decided about renting rather than buying.

Dr. Shaffner said they had to look at which was more important, the software or the hardware. He asked how the computer made a difference in what a youngster learned in language arts, social studies, and being a human being. Mrs. Shannon said they had to look at both, the computer as a tool for learning or earning.

Aside from staff needs, Mr. Ewing asked how they were going to go about the business of delivering this to the schools. This involved teacher and staff training. Dr. Martin replied that there were staff in other departments who had competencies with the computer and had taken in-service courses. In addition, many schools had developed their own organizational capacities. She explained that one of their dreams was to have a staff person to work in a computer lab in each school. Mr. Ewing thought that the delivery question was important and dealt with a whole range of issues. MCPS was a large school system with 150 schools and three areas, but all of that was less than it used to be. They had reduced staff and scaled back the area offices. He asked whether this was going to be a problem given the limited number of people they had to implement the policy.

Mr. Robert Schoening, Giant Food, commented that as they built competency with the staff, they would suffer the same problem as industry. They would lose trained and competent people. He felt it

was important to have computer literacy in the school system because most jobs in Giant did involve knowledge of and use of the computer. People have to have computer concepts because the technology was changing so fast. He agreed that programming as they now knew it would cease to exist in a few years.

It seemed to Mrs. Praisner that Mrs. Shannon's revisions to the policy were excellent. She would like to see specific objectives on how they were going to implement this so when the Board went before the Council they would have a timeframe. Dr. Martin agreed to provide this. Mr. Ewing said that a local progression was from a policy to a plan for implementing a multiyear budget with a focus from next year because the Council like to have that kind of information.

Mrs. Lefkowitz congratulated the staff on the progress they had made in such a short time. Mr. Ewing thanked the staff, citizens, and representatives of business and industry for their participation in the meeting. He felt they were heading in the right direction and looked forward to the adoption of the policy.

Re: Adjournment

The president adjourned the meeting at 10 p.m.

President

Secretary

HP:mlw

