The effective utilization of a new technology requires a proactive approach by administrators.

Implementing Computer-Based Instructional Programs: A Report from a Rural School

by Lew McGill and H. Custer Whiteside

Description of the School District

Riley County school district is a small rural school district of approximately 500 students. The population of the school district is evenly divided between agriculture and those who are employed in one of the neighboring communities. There appears to be a high number of college graduates among the students' parents and, over all, the district is very supportive of the educational efforts of the school district.

Riley County school district is small in area as well as population. The school district receives about 60 percent of its yearly budget in the form of state aid. The district has a low tax base and the mill levy is slightly below the state average. The community takes a lot of pride in the educational efforts put forth by the district.

Status of Computers and Support

In 1982, microcomputers were just starting to be introduced in area school districts. Members of the board of education encouraged the administration to investigate the potential for using microcomputers in the district. The administration began investigating microcomputer applications. However, it became evident that very few educators in the state were knowledgeable about microcomputers. The district did not have staff members with computer training, but there were a number of teachers who expressed some interest in exploring the area of computers and their applications.

Conversations with salesmen concerning computer sales and possible training turned out to be a waste of time. The superintendent began to attend seminars and read articles on how to effectively introduce computer technology into classrooms. Turning to the literature on computers seemed to be a reasonable approach and was, in fact, very helpful. Unfortunately there was not much information available on the efforts of other schools and their attempts to assimilate computer technology.

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Plans, Goals, and Objectives

In the beginning, the school district had no policy regarding computers. Everything the school district did was going to be new. A review of computer articles identified potential parallels concerning the introduction of educational television and microcomputers. Several authors noted the mistakes made by educators in their attempts to introduce educational television into the classroom. They warned that similar approaches were being used to introduce computers into education. They suggested that a systematic approach be utilized to introduce this new technology to prevent the problems encountered with the introduction of educational television.

Another recommendation from the review of articles related to staff development. It pointed out that teachers need to understand how to use computers and be willing to accept their responsibility for incorporating computers into their classes. The primary goal of the district was "to train all of the teachers, clerical staff, and administrators in the use of the microcomputer, software, and operations so that this skill could then be taken back to the offices and classrooms and used without fear." A decision was made, based on the small size of the teaching staff, that all teachers should be trained on computer use at the same time.

When this training would take place and who would lead it became important considerations. A decision was made to devote all the teacher inservices for one year to training the teaching staff in the use of the microcomputers. A search began for someone with expertise in computer use to train the staff. An educational consultant from a local university was contacted and employed to conduct the district inservice.

The first inservice sessions were devoted to giving the teachers general information and attempting to relieve any fear they might have regarding microcomputer use. The following concepts were used as guidelines for the sessions:

1) Introduce participants to current developments in computer applications in education, business, and government;
2) Introduce participants to computer hardware, set-up procedures, general operation, care and use of hardware and software;
3) Introduce participants to public domain and commercial software which provide computer-assisted instruction;
4) Provide participants with information regarding different microcomputers and their advantages and disadvantages;
5) Provide participants with hands-on practice with computer applications for teachers in the classroom.

In addition to these guidelines, several policies were developed and approved by the board. These included the following:

A. The teachers will be given the opportunity to learn about computers in a non-threatening environment and advance their computer knowledge and skills to a point where they feel confident. It was the superintendent's opinion that it would be unfair to teachers and fatal to the project if the teachers were required to go back to the classroom and at-

tempt to utilize and teach what they had just learned.

B. The inservice computer training will be presented over a period of at least one year at a pace determined by the teachers' abilities to understand and apply their newly acquired computer skills. Teachers will be expected to spend additional time, out of school, to learn about computers and their applications.

C. Inservice programs will consist of one-half day per month devoted to computer education, for the full school year. The students will be dismissed for this half day and lunch will be provided for the teachers. (An on-going evaluation of this policy revealed that the amount of time alloted for the inservice sessions appeared to be sufficient. The teachers enjoyed the hands-on activities and stated that they looked forward to the next session. It appeared the teachers felt more responsibility because they could see the amount of commitment being put forth by the board of education.)

D. Inservice training will be provided at board expense. All essential books and materials will be furnished. A sufficient number of computers will be made available for the participants.

E. An experienced consultant will be hired to plan and present the inservice sessions. In addition to computer expertise, this person will need to demonstrate an understanding of contemporary theories and practices on effective schools and staff development principles. (The selection of this individual and his ability to work with our teachers and administrators were key elements to the success of our introduction to computers.)

By introducing computers to the teachers in this way, it was felt that the anxiety of teachers would be diminished and they would come to accept the computer as simply another teaching tool to assist them with their daily responsibilities. The training was planned so that the teachers had the opportunity to become skillful in using computers and gain experience in handling, reviewing, and selecting public domain software for use in the classroom.

A policy was also established for the purchase of software. Upon the request of a teacher, the district office wrote a letter to software publishers requesting permission to review that software which had been chosen. The publishers were guaranteed that their products would not be copied. After review, if the teachers approved of the software, the titles were put on a list to be purchased. If the software was not purchased, the requesting teacher was asked to respond to the publishers, in writing, and explain why their software would not be used. During two years of this procedure the district has never been denied a request to review a software product.

Since the district did not own any software, a line-item in the school budget was established to cover the purchase of such materials. Once the teachers became aware of this support, they began to request software of review and purchase. The teachers were very careful about the software eventually recommended for purchase. Methods for effective software selection became the most important topic of the computer inservice training.

The district established a policy regarding duplication of software. Simply stated, the copying of any copyrighted software was prohibited. This policy was reiterated frequently during the first year and illegal copying has not been a problem within the district.

When the introductory computer training was completed, the first computer purchases were made. At that time, little was known about computer hardware. However, the software utilized during the inservice had been developed for the Apple or the Commodore computer. Since the teachers had selected software which would run on these machines, two Apple IIe and four Commodore 64 computers were purchased for teacher use.

One Apple and two of the Commodore computers were placed in each school. With six computers for 36 teachers, the training program developed by the consultant progressed very smoothly. The teaching staff was so enthusiastic that the computers were signed out nearly every hour of the day and more units were eventually purchased.

In December of 1984, teachers were asked to give their recommendations for computers to be used in the instructional program. Their answer was quick in coming because one of the computers was faster and easier to use. These computers were then purchased. In preparing this new order for computers, additional equipment was also purchased for secretarial and administrative training and use. Since the primary goal was to prepare teachers to use microcomputers effectively in their classrooms, the training to this point had focused on teachers. A program was soon planned to assist the office staff in making the transition. It had been apparent from the beginning that someone needed to be responsible for cataloging and distributing the new software and hardware. The responsibility for this job was discussed with the district librarian, who eagerly accepted the responsibility. At the time, it could not be anticipated how important this job was to become. The librarian had a solid understanding of what was needed to assure an orderly flow and accounting of all software and hardware. She established a comprehensive software catalog and an inventory of all hardware purchased by the district. It is important that a dependable person be put in charge of these responsibilities.

The board of education was constantly informed concerning the plans for implementation and the progress being made. This eliminated surprises for the board members as future plans and estimated costs were presented. Since they had been a part of this project from the beginning, it was not difficult their board support.

During the spring, some staff members and administrators discussed ways to introduce students to the computers. After some research, which included visits to several schools around the state, it was decided that the best approach would be to establish computer labs in both schools. There were sufficient computers to equip the labs and space was available to serve as the labs. During the visits to other schools, a list of ideas for what to do and what not to do in designing computer labs was collected. The computer labs were an instant success at both schools. Within a short time students were being taught a computer competency class, and some of the staff was confident enough to take their regular classes into the lab for additional work.

By the end of the first year of the plan, 25 computers and a moderate amount of software had been obtained. Requests for permission to take the computers and software home for the summer were received from the staff. Guidelines were established to allow the staff to check out software and hardware. It was encouraging that the teachers wanted to take the computers home for the summer in order to improve their computer skills.

The main thrust of the plan for the following school year was to begin developing students' computer skills. It was proposed that an interested teacher from the elementary school be appointed, and a new computer teacher be hired for the high school to work with both teachers and stu-

dents in the computer labs. These proposals were recommended to the board of education and approved.

While the district was making a sizeable investment in computer equipment and training, it was decided to look for a person with a computer background to serve as a resource person and coordinator. This was a difficult task because of the shortage of people with the necessary training. A person with math and computer skills was hired to teach at the high school, but that person did not have the leadership skills and training necessary to take an active role in directing the efforts of the school district.

The inservice for the next school year was to be devoted to assisting teachers in working with students on computer applications. The consultant was reemployed for another year to assist the teachers in this effort.

The school board wanted to continue encouraging teachers to use computers. A number of teachers were sent to a national conference on computers, and several other teachers also went to various state and local conferences on computers and software. Soon the board adopted a policy concerning the hiring of new teachers for the district. Teachers without some computer training would not be hired by the district. The members of the schoolboard were firm in their commitment to the program.

At the present time there is a computer in every classroom in the elementary school. The teachers use them as a learning center and the students are allowed to use this center as they would any other center in the room. The teacher is also free to use this computer to complete administrative or clerical duties and is encouraged to do so.

Evening adult computer courses have been offered and were well attended. There continue to be requests for more adult education on computers, but at the present time budget constraints have kept the district from expanding this area. However, funds have been made available to staff the computer lab in the elementary school after school hours for students.

The effective utilization of a new technology requires a proactive approach by administrators. Careful planning and formation of new policies are critical aspects of the process. Teachers, students, board members, and the public must understand the goals and objectives of these new programs. Two-way communication must be maintained between all participants. As we enter the 21st century, schools must be preparing students and educators to use effectively these new tools of the Computer Age, and our program is working toward that goal.