THE EFFECTS OF USING NETWORKED INTEGRATED TESTING AND SKILLS
SOFTWARE AND PARENTAL INVOLVEMENT ON ACHIEVEMENT,
ATTITUDE, AND SELF-ESTEEM OF AT-RISK STUDENTS

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Gary E. Robinson, B.M., M.M.
Denton, Texas
December, 1992
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The purpose of this study was to determine whether using integrated, networked testing and skills software combined with parental participation would increase students' achievement in reading, improve students' self-esteem and improve attitude toward school. Further, the purpose was to determine if parental participation promotes improved attitude toward school.

The computer-managed reading program began with the installation of networked software with the capability of managing student progress. Students from the fourth through the sixth grades made trips to the computer room to work on reading comprehension in preparation for the norm-referenced reading achievement test to be given in late spring 1992. Students were assigned homework packets periodically, based on the diagnostic/prescriptive software.

Parents were also invited to participate in specially organized computer classes that provided job skills training and reading instruction. Students were placed in groups based
on the level of or absence of parental involvement at school and parental participation in the adult computer classes.

There were no significant differences in student reading achievement on the norm-referenced reading subtest between students whose parents participated in computer classes and those parents who did not participate.

There was a significant difference in student reading achievement on the norm-referenced reading subtest between students whose parents were parent mentors and students whose parents were in the comparison group. The students in the parent mentor group scored higher on the reading subtest than the students in the comparison group.

There was no significant difference in scores on self-esteem for students in the two groups. There was no significant difference in scores concerning attitude toward school between the two groups. There was a marked difference in the responses of parents in the treatment group and the comparison group to the parent attitude survey.
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CHAPTER 1

INTRODUCTION

American public schools face tremendous obstacles in trying to accomplish the mission of educating all students to be productive members of society. The structure and make-up of the business world are changing from one of heavy industries to service and information industries. This places a premium on the education and educability of the work force. Technical and highly-skilled jobs are being created everyday at the expense of three to ten jobs in other areas (Keough, 1986). If this trend continues, our country may become a bifurcated society consisting of a highly-skilled, highly paid upper class, and an unskilled, under-paid, under-educated lower class. Levin (1989) states, "The specter of a dual society suggests great political conflict and potential social upheaval. . . . Economic and educational inequality in conjunction with equal political rights suggests future polarization and intense conflict" (p. 50).

According to Keough (1986), approximately 20% of future jobs will require a bachelor's degree. "Most of the rest, 50 to 75 percent, will require some form of secondary and/or post secondary technical education" (p. 4). "Technicians and maintenance workers will require software skills, while many,
semi-skilled and unskilled jobs will disappear... In order to remain employable, craftsmen and draftsmen will need to be familiar with computers and electronics" (Forester, 1987, p. 255). In other words, the whole work force will have to be more highly skilled. On the other hand, schools are faced with educating an increasingly divergent population. By the year 2020, minorities will constitute a majority of the school-age population (Levin, 1989). These students are often considered to be at risk of not completing their education.

Many educators believe that the key to education in the future is preparing students for change. In the technical fields, for instance, few jobs will stay the same for very long because of rapid advances in technology. Indeed, lifetime learning may well become a reality. Therefore, change will be an important aspect of employment.

The key to helping at-risk students prepare for the future, stay in school, and garner a job in the work force is to make sure that each of them can read. Reading success is an essential element, and for those students who may be at risk, it is especially important. The consequences of failing to learn to read are severe.

At-Risk Populations

The at-risk population has a much faster growth rate than the rest of the population (Levin, 1989). Levin asserts
that "upwards of 30% of students in kindergarten through 12th grade are educationally disadvantaged or at risk" (1989, p. 49). He also predicts that another consequence of the continued growth of the at-risk population will be a "serious deterioration of the labor force" (p. 51). The challenge for schools is to find a way to educate the at-risk population to prepare them for productive jobs and to increase social stability.

Language barriers and cultural differences add to the complexity of the burden which schools face in educating all the nation's students. Those students who are from a foreign country and speak no English are often considered at risk. Although immigration has always been a driving force in shaping the curriculum of the nation's schools, the pattern of migration has shifted from Europe to what has become known as Third World nations. Pam Latt, a student service director in Fairfax County, Virginia puts it this way: "'It's simple,' says Latt, pragmatically assessing the ripple effect of world politics and international migration. 'If there's a conflict in the newspaper today, you can expect the kids to be here tomorrow'" (Harrington-Lueker, 1990, p. 17).

On the other hand, there is a great deal of diversity among similar ethnic groups in this migration. Hispanics are not just Mexican. They are also from Puerto Rico, the Caribbean, and Central and South America. Asians are not
just Japanese or Chinese; they are also from Korea, Vietnam, Cambodia, and Thailand. All these countries have different cultures, different languages, and different educational philosophies. The one common denominator is this: All parents want their children to be successful members of society.

Parental Involvement

A large body of evidence, collected over the last two decades, indicates that parental involvement provides one of the most powerful ways of increasing student achievement and self-esteem. The positive effects of parental involvement extend from preschool to high school (Swap, 1990). When there is some kind of continuity between what goes on at school and what goes on at home, there is a reinforcement of the learning and an easing of the possible tension between the home and school environments (Swap, 1990). The differences in language, social customs and even the availability of space to study all make it more difficult for the at-risk learner to achieve (Slaughter & Epps, 1987).

The problem in some communities is that the parent's ability to assist the child is limited by the educational level of the parent. This problem exacerbates the dilemma in which at-risk students find themselves. Their parents cannot help them, even when they may want to help very much. The possibility exists that parents may play a larger role in the
education of their children when they understand better what the child is doing in school.

The Learning Center

The learning center concept was developed as an alternative to bussing to achieve equality of educational opportunity in a neighborhood setting. The learning center used in this study is located near the downtown area of a large southwestern metropolitan city. It opened in the 1988-1989 school year. As of 1991, there were 13 of these centers in the district. These centers have a teacher-pupil ratio of 18:1, with a maximum of 20:1. Additionally, the centers employ classroom teachers who have exceptional skills as teachers. Teachers receive incentive pay when test scores indicate significant gains in student achievement in their area of instruction. Teachers have the opportunity and receive encouragement to participate in extensive staff development activities. The schools feature individualized skill-focused instruction and multiple instructional techniques combined with an abundance of equipment and materials that may not be found at other schools.

The centers also have extended day programs, before and after school programs, two hours of mathematics instruction, and improved science and computer laboratories. Students at the learning center used in this study are required to attend tutoring classes before or after school. The schools offer
extracurricular activities like choir, drill team, cadets, handbells, Girl Scouts and Boy Scouts. After school programs include tutoring, homework centers, arts and crafts, etiquette, journalism, sewing, computers, athletics, and drama. The number of students served in the before and after school programs at the learning center totaled 250, with 11 participating teachers.

One of the key features of the learning center concept is the premise that parental involvement and support are of tantamount importance in the quest for equality as well as excellence. The community liaison is the person who functions as a conduit to the community.

The liaison's responsibilities include aiding teachers, administrators and parents in communicating with one another. The community liaison regularly visits homes in the community to develop an atmosphere of trust and provides notice of and encouragement to attend school programs and PTA activities. Parents learn to understand the grade reports, and standardized test results are explained to those who may not understand the reporting language. Additionally, the liaison has contacts with government, medical, and community counseling centers to provide various types of aid to needy families. The liaison is the key person who recruits adults for various types of adult education.
The learning centers have a diverse teacher and administrator population that approximates the ethnic make-up of the community generally and the school district specifically. The administrators at the learning center have special insight about their school and the community and were responsible for the initiation of this study.

Statement of the Problem

The problem in this study was to determine whether using integrated, networked testing and skills software combined with parental participation would result in increased student achievement in reading, an increase in student's self-esteem, and an improved attitude toward school. Further, the problem was to determine if parental participation improved students' attitudes toward school.

Research Questions

1. Is there a difference in reading achievement between students whose parent(s) participate in parent computer classes and those students whose parents do not participate?

2. Is there a difference in reading achievement between students whose parent(s) are identified as parent-mentors and those students whose parents are not identified as parent-mentors?

3. Is there a difference in students' self-esteem before and after participating in a computer-managed reading program between students whose parents choose to participate
in parent computer classes and those students whose parents do not choose to participate?

4. Is there a difference in attitude toward school between students whose parents choose to participate in parent computer classes and those students whose parents do not choose to participate?

5. Is there a difference in attitude toward school between parents who participate in the computer program and other parents?

Overview of Methodology

The population in this study consists of students in grades 4 through 6 in a learning center of a large southwestern metropolitan school district and their parents. Students in the center went to the computer room for systematically scheduled reading instruction. Prior to each visit to the computer lab, the teachers gave their classes one hour of direct instruction. While students were using the computers, teachers evaluated the results of the previous trip to the lab. Students were assigned homework packets according to their individual needs. The instructions for each student's individualized packet were preserved on computer disk, and the computer specialist then generated the individual homework packets for all students.

Initially, the reading subtest scores of a nationally recognized norm-referenced achievement test, with
supplemental information provided by the computer program, were combined to create individual student profiles identifying areas that needed attention. As the term progressed, the diagnostic and prescriptive portions of the software were used to diagnose and prescribe for each student to update the student profiles.

The community liaison assisted by visiting each family to instruct them on how to interpret the profile reports. The liaison also assisted in recruiting parents for computer classes and encouraged them to take advantage of other adult learning activities available at the school.

Each time a parent helped a child with the homework packet, the parent signed the packet before the child returned the homework. Further, each parent was strongly encouraged to participate in the adult computer training part of the program.

The reading subtest scores constituted the primary achievement measure; while self-esteem and attitude surveys measured students' feelings. A parent survey measured parental attitude toward the learning center.

Definition of Terms

For this study, the following definitions are used: 

At-risk—a student who is in danger of dropping out of school or "one who is in danger of failing to complete his or
her education with an adequate level of skills" (Slavin & Madden, 1989, p. 4).

**Community Liaison**--an employee of the school district in this study who regularly makes personal contact with the families who live within the attendance area of a learning center.

**Computer-managed cooperative parent/child reading program**--a program designed to involve parents directly in their children's learning by having the parents complete the same program that their children use.

**Computer-managed instruction**--a software package with a diagnostic portion that tests the strengths and weaknesses of individual students and produces student profiles based on individual needs.

**Computer parent**--a parent who has participated in computer training sessions at the learning center--a subset of the parent-mentor.

**ESL (English as a Second Language)**--a program to teach English to students whose first language is one other than English.

**ILS (Integrated learning system)**--a computer package which offers several instructional computer programs that have the capacity to track the progress of many students simultaneously and offer diagnostic and prescriptive information.
Learning center--an elementary school in a large metropolitan city that, by court order, offers to low socioeconomic neighborhoods (a) special programs, (b) teachers identified as outstanding educators, and (c) additional finances to ensure equality of education for the children of the area.

LEP (Limited English Proficiency)--a program for students with limited English speaking skills.

Parent-mentor--a parent of a child, or children, at the learning center who is designated by the local school administration as being a reliable and positive participant in all or nearly all school activities involving parents.

Reading comprehension subtest--the portion of a norm-referenced test that tests reading comprehension.

Self-esteem--a quality measured by the academic self-concept and achievement motivation survey designed by the school district.

Skills Bank II--the diagnostic computer program used in this study that maps skills deficiencies on a student profile and generates student lessons on those deficiencies.

Limitations

This study provided information for a specific population. Broad generalizations may not be possible because of the special population, which is in a special setting not generally encountered in other elementary schools.
in the district. Information that applies here may not apply to other schools. The population of this school consists of many at-risk students, who may move one or more times during the school year.
CHAPTER 2

REVIEW OF THE LITERATURE

The review of related literature in this study consists of three main parts. The first part discusses (a) attributes of at-risk populations, (b) characteristics of at-risk programs, and (c) development of at-risk programs. The second part deals with parental involvement and is composed of (a) an historical perspective, (b) types of parental involvement, and (c) results of parental involvement studies. The third part discusses computer-managed instruction in four sections: (a) general description, (b) general characteristics, (c) evaluation criteria for the selection of ILSs, and (d) results of studies employing ILSs. Following part three is a summary of the research and a discussion of the need for this study.

At-Risk Populations and Programs

Attributes of At-Risk Populations

Since the War on Poverty of the sixties, Americans have become increasingly aware of their responsibility to address the needs of all children. Disadvantaged children come in a number of different descriptions besides being poor. Broken families resulting in single parent households, language barriers, cultural differences, and drug addiction may all
play a role in the designation of a student as disadvantaged. Today we refer to these students as being at risk because they display characteristics that tend to predict that they will drop out of school before graduation.

There are a number of definitions of at risk. Most definitions have several components, any combination of which may result in the student dropping out of school. Levin (1989) identifies the distinguishing characteristics of at-risk students as marginal yearly gains in achievement that result in students falling behind grade level. By the sixth grade, they are two years behind, and by the twelfth grade, they are four years behind. Slavin and Madden (1989) describe the at-risk student as "one who is in danger of failing to complete his or her education with an adequate level of skills" (p. 4). Frymier and Gansneder (1989) define at risk as the likelihood that a student will fail either in school or in life. Alienation from other students, teachers and the school itself was among the reasons many students choose to drop out (Lockwood, 1989). Usually, researchers say that at-risk students are in danger of dropping out or failing for several reasons, not usually just one.

The Phi Delta Kappan study of students at risk (Frymier & Gansneder, 1989) identified 45 attributes that could identify students with a high risk of dropping out of school. They determined that if students had at least six of these
attributes, they were at risk. The study found that between 25% and 35% of youths observed had at least six of the 45 factors which link students to the at-risk category. The study identified three problems common to at-risk students: lack of skill, lack of information, and retention in grade.

**Characteristics of At-Risk Programs**

Mann (1986) believes that programs that work with at-risk students have four characteristics: "...what I call the four C's: cash, care, computers, and coalitions" (p. 9). The money comes from job programs and employment opportunities. Concern comes from everyone realizing the depth of the problem and caring about wasting the lives of the young. Many studies find that computers have qualities that offer special help to disadvantaged students. The anonymity of working alone and the stimulation of several learning styles at once are both reasons for adopting the use of computers to fight the at-risk problem. Also, at-risk students may feel inhibited and fail to participate in class. Cultural differences may cause different home and school behavior. Computers can help to alleviate the tensions caused by these differences. Finally, coalitions between schools and businesses will also help to alleviate the problem.

Alderman (1990), has developed a Motivational Links to Success program that features a four-step process. The
purpose is to teach at-risk students how to set and work toward goals. It is a guide to foster motivation and teach self-esteem in students who do not believe that their actions will lead to success.

Hamby (1989) lists, among other things, the idea of continuous-progress mastery approaches to keep from retaining students. Constant monitoring with comments will help to ensure student competency. This approach is best handled by computer-assisted instruction with monitoring of scoring so that there are continuous comments, devoid of prejudice, individualized, and self-paced. Bialo and Sivin (1989) believe that the multisensory approach of the computer will provide a successful alternative that should appeal to at-risk students. The sense of privacy while using a computer provides comfort and encouragement for the at-risk student (Bialo & Sivin, 1989).

Pogrow (1990) asserts that the primary cause of low achievement in at-risk students is inadequate metacognitive skills, not a lack of practice. This lack of training in the application of thinking strategies causes a consequent lack of achievement in problem solving. For software to be effective with these learners, it must not emphasize the development of content knowledge; rather, programs should seek to heighten curiosity and motivation to promote the kind of emotional involvement that heightens learning. Smith
(1989) reports of a high school that is motivating at-risk students by having them produce school publications.

**Development of At-Risk Programs**

Barnett (1985), Levin (1972), Ramirez and del Refugio (1987), and Catterall (1985) did cost-benefit analyses of the high school dropout problem. All found a significant benefit for keeping these students in school to finish their education. The results indicate that society receives a high return in social and monetary benefits that exceeds the cost of the investment. The individual and the society benefit from the education of every member of the society.

Wheledge and Smith (cited in Lockwood, 1989) offer another way of addressing the quality of education for at-risk students. They believe that alternative methods of educating at-risk students can provide the special community of support that these students need to be successful. One of the findings is that at-risk students often feel alienated from the traditional school. Alienation for these students comes from difficulty doing the work, a disregard for the importance of the work, and an estrangement from teachers and peers. "Reestablishing that social relationship seems to be fundamental to the success of many of these programs" (p. 52).

Further, Whelage and Smith (Lockwood, 1989) offer three recommendations for policy and practice in dealing with at-
risk students: (a) strengthening alternatives for at-risk students and improving teacher training, (b) improving systematic information management so that those students who are at risk can be identified and tracked, and (c) improving community-school partnerships to provide services and support for potential dropouts.

Slavin and Madden (1989) developed some general principles of effective at-risk student programs. Effective programs are comprehensive, intensive and employ frequent assessment. Programs should be well-defined and well-planned. They are complete and systematic alternatives to traditional instruction. Effective programs are intensive, using one-to-one instruction techniques (cooperative learning, CAI, etc.). Effective programs monitor closely student achievement and adapt instruction to meet the individual's needs.

In contrast, Rood (1988) believes that there should be new methods of assessing student achievement. The educational system today is concerned only with students passing minimum competency tests. The focus should be on the quality of education, not minimum standards.

Conrath (1988) has four principles for dealing with at-risk students: (a) offer quality alternative programs designed to emphasize success rather than guarantee failure;
(b) make sure the course work chosen by students relates to the individual's needs to become productive in society; (c) do not patronize at-risk students; praise must be real, work must be meaningful; and (d) limit and carefully state homework.

It is important to understand and acknowledge cultural differences when working with at-risk students. Slaughter and Epps (1987) emphasize that, "...lower income black children are quite 'verbal,' but that the norms governing when and how they should speak are different from middle class norms" (p. 9). Teachers should keep this in mind when designing learning strategies. "Low-SES [socioeconomic status] and Black families often lack the human and material resources needed for a positive academic environment in the house" (Slaughter & Epps, 1987, p. 19).

One of the problems to overcome with inner-city minorities is that they tend to have no vision of the future. They lack motivation to set goals. They feel that they do not control their lives and that they feel that they have no way to shape their future. Culturally responsive strategies help to motivate and inspire inner-city minority students.

Abi-Nader (1991) finds that many Hispanics have no family tradition of expectations of academic success. The PLAN (Program: Learning According to Needs) addresses the problems of Hispanic minorities in raising their expectations
of success to help Hispanics develop strategies for planning for the future (Abi-Nader, 1991). The results are very encouraging: "Typically, 60% to 65% of PLAN students attend college, compared to 40% of all seniors at the school who declare an intention of going to college. Many PLAN students attend private four-year colleges and universities and study law, nursing, computers, medicine, political science, and engineering" (p. 548).

The literature indicates that there is a very real and serious need to find effective practices for the education of at-risk students. The costs to the individual and the society are too great to allow such a large part of the population to flounder and fail in their education.

Parental Involvement

**Historical Perspective**

Before 1981, the literature did not generally recognize that involving parents in schools and school activities would result in higher student achievement (Henderson, 1987). The effects of parental involvement have been noted in the literature in these general categories: (a) higher grades and test scores; (b) long-term academic achievement; positive attitudes and behavior; (c) more successful programs; and (d) more effective schools. Henderson (1987), Gordon (1978), and Becher (1984) found that forms of parental involvement were not as important as good
and comprehensive planning and longevity of involvement. Radin (1972), Scott and Davis (1979), Bronfenbrenner (1974), Lazar and Darlington (1978), and Gotts (1980) have all reported that at-risk students have been found to retain their skills for years after parental intervention if the parents are schooled in teaching techniques.

Benson (1979) also found that parents could have a substantial impact on student achievement. The amount of time spent with their children and the varied types of activities in which they engaged could raise achievement. However, there was a difference between families of high and low socioeconomic status. Children of high income families tended to show higher gains than children of low socioeconomic status. In other words, children from the lower income group tended to perform below average, even with parental intervention. This study tends to support Coleman's (1987) and Henderson's (1988) findings. However, David Irvine (1979) studied an intensive effort to reinforce the home-school connection in preschoolers. The results indicated that the children who had the greatest amount to gain showed the most improvement.

From an historical perspective, Comer (1986) examined the cultural changes that have affected families, education, schools, and communities. He offers the results of a parent participation program that produces significant benefits in
the relationships between students, parents, schools, teachers and administrators.

Coleman (1987) discusses the problems created by the changing relationship between families and society. The concept of social capital is defined as "... the norms, the social networks, and the relationships between adults and children that are of value for the child's growing up. Social capital exists within the family, but also outside the family, in the community" (p. 36). Coleman suggests that the erosion of social capital in the home must be made up by public investment in the idea of offering care for children "... all day; from birth to school age; after school; every day, till parents return home from work; and all summer" (p. 38).

Types of Parental Involvement

Rich (1988) offers the idea of a structured approach to involving parents in the education of their children. The aspects of this structured approach involve training parents as educators, involving the community as a whole in the process, promoting greater cooperation between teachers and families, and the development of family-style learning activities. Becher (1984) also found that parent education programs where parents are trained to help their children also produced significant student achievement gains.
Epstein (1987b) reports the results of a survey that described techniques for involving parents and finds that the principal plays a key role in the development and maintenance of effective programs.

In her review of research on the effectiveness of school programs that have strong parental involvement, Henderson (1988) states that studies show that schools with higher levels of achievement have correspondingly higher levels of parental involvement. However, she also found that while parent involvement at home was extremely effective in improving individual performance, "...it is not necessarily sufficient to make a difference for the school as a whole. The average level of achievement of a school does not appear to rise unless parents are involved in the school" (p. 151). With respect to at-risk populations, Henderson (1988) states: "Parents' efforts do improve achievement, but they do not entirely overcome the disadvantages associated with low socioeconomic status" (p. 151).

After over 20 years of research in parental involvement, Epstein (1987a) has derived five major forms of involvement: (a) basic parenting, (b) school and home communication, (c) parents at school, (d) parents helping children at home, and (e) parents involved in decision making. Also, she identifies 16 ways to involve parents in the schools. These 16 ways to involve parents include activities at home and
school. Further, and contrary to popular misconceptions about low SES parents, Epstein (1983) has found that parents of all races want their children to be successful students and succeed in school.

Sommerfeld (1992) reports that a coalition of 23 major national education associations is promoting the improvement of parental and family involvement in the public schools. The coalition adopted five joint goals for future action that include a renewed commitment to family involvement issues, improved public awareness of the need for parental involvement in education, to address multi-cultural issues and the needs of people from diverse backgrounds, and to seek legislation and governmental policies that will improve parental involvement in education.

Henderson, Marburger, and Ooms (1987) describe seven fundamental essentials to produce effective parent-school partnerships. Practices drawn from actual schools with effective programs are presented. One fundamental principle of particular importance is the encouragement of volunteer participation from both parents and the community at large. Another is the concept of parents as collaborators who play a complementary role in the educational process.

Also, in the development of an effective home-school relationship, Culyer (1988) identifies three groups (parents, children, and professionals) with educational responsibility
and proposes a set of items of accountability for each group to develop a stronger partnership. Sandfort (1987) describes programs that go beyond volunteering to develop partnerships and activities that close the gap between school and home. Hawley and Rosenholtz (1983) found that parental involvement was one of four factors critical to effective schools. Purkey and Smith (1983) also list parental involvement as a critical attribute to effective schools, as does Fullan (1985).

Leitch, Tangri, and Tangri (1988) examine the barriers between school and home as seen from the perspectives of parents and teachers. They suggest that one of the main barriers to effectiveness is a lack of knowledge about the ways each group can use the other effectively to strengthen the relationship. Ascher (1988) examines urban parental involvement in poor and minority communities. Many barriers exist that make the establishment of successful parent-school partnerships in poor and minority communities more difficult. Work schedules, single-parent families, and language differences make the process of communication more difficult. One activity listed by Ascher to help persuade parents to become involved is the use of "learning activities created by the schools that parents can use at home to help their children" (p. 118).
Also, Ascher suggests that the common practice of linking student achievement with parental involvement may be too narrow a focus in gauging the effectiveness of the activity. She suggests that parental involvement "...may have much wider effects, such as on student citizenship and social values" (p. 120).

A consistent body of evidence shows that family background is among the most important predictors of students' academic proficiency (deKanter, Ginsburg, & Milne, 1986). de Kanter et al. emphasize parental involvement strategies that use traditional home-based activities that do not require special skills for the parents. The approach has parents use everyday activities in the home to emphasize the kind of behavior and the kind of attitude that promotes academic achievement at school. The authors suggest a four-step plan for the school district to follow to help implement the plan: "(a) informing parents of the specific instructional objectives for the child; (b) reporting to the parents on each child's program; (c) providing materials and suggestions to parents to help them promote the education of their children at home; and (d) consulting with parents about how the school can work with parents to achieve the program's objectives" (p. 21).

In a two-year study of parental involvement programs, the Southwest Educational Development Laboratory found seven
common characteristics contributing to success (Williams & Chavkin, 1989). The essential elements common to all successful programs are: (a) written policies, (b) administrative support, (c) training, (d) partnership approach, (e) two-way communication, (f) networking, and (g) evaluation.

Student recognition and constant communication are two elements of a successful California parental involvement program (Davis, 1989). Students receive paper awards at school, and the parents receive calls at home to tell of their children's accomplishments in the parent's native tongue. Rich (1988) states that parents feel responsible for their children to the extent of feeling responsible for the decline in standardized test scores. This sense of strong involvement is probably one of the most hopeful signs for the future.

Results of Parent Involvement Studies

Herman and Yeh (1980) report that parental involvement is positively related to school outcomes and that the degree of parent interest is related positively to student achievement. The results indicate that giving parents a voice in the decision-making process tends to build parental support and diffuse criticism. Moles (1987) examines attitudes of parents and teachers toward parental involvement and states that parent tutoring at home is more likely to be
adopted as a parenting activity. Epstein (1984) found in a statewide study that 70% of the parents with elementary school age children never participated in school activities, but over 85% of those parents spent at least 15 minutes helping their children with homework when requested by the teacher.

Research tends to support the approach that encourages the efforts of parents to assist in the instructional process at home (Hawley, Rosenholtz, Goodstein, & Hasselbring, 1985). Epstein (1984), in a longitudinal study of 14 teachers who reported using varying amounts of parental involvement strategies, found that students whose teachers made greater use of parent involvement strategies had significantly higher reading achievement test scores from fall to spring. In a later study, Epstein (1991) states that while most schools endorse partnership between parent and school as a concept, few have brought their beliefs into practice. She further asserts that federal, state, and local resources can be used to fund those programs that are found to be viable and effective.

Chapter 1 programs can provide successful strategies for the improvement of communication with families (D'Angelo & Adler, 1991). New rules require that programs must assess their effectiveness in achieving parental involvement. Of particular interest here is the use of technology to contact
more parents. Radio stations, video productions, cassette tapes, and homework hotlines for students and parents all work to reach one specific audience. Even Start is a federally funded program combining adult literacy training with early childhood education to help "break the cycle of poverty that often passes from parent to child" (Cohen, 1992, p. 1). Passed as a part of 1988 legislation to reorganize Chapter 1, this program seeks to blend services for both children and adults.

Urban Partnership Grants, offered by the Illinois State Board of Education for schools with high concentrations of at-risk students, feature school-based participation, with emphasis on parental participation (Chapman, 1991). A special feature of note is the fact that these grants are multiyear. "Most state grants are awarded for a single year, but it often takes longer than a year to see progress in improving urban schools and involving parents. With support that lasts longer, the schools are able to establish and stabilize their programs" (p. 358).

Dornbusch (1986), in a study involving some eight thousand high school students, found that family patterns and parenting styles had different effects on student achievement. Gordon (1979) discovered that the more thorough and long-lasting parental involvement was, the greater the effect on achievement. Interestingly, he found that the
authoritarian style of parenting produced the lowest gains in student achievement and that the authoritative (strong, but approachable) style produced the highest student gains. Clark (1983), in a study of 10 African-American families, also found that the authoritative style of parenting represented higher student achievement regardless of socioeconomic status. Similarly, Coleman (1987) found that students of Catholic schools did better than students in the public sector with the same general background. The implication of this finding is that Catholic schools see themselves as extensions of the family.

Our large metropolitan centers contain a rich diversity of cultural backgrounds among the citizenry. Teachers and parents often do not share the same backgrounds and cultural values. It is important for the school to emphasize that the purpose of the parental involvement program is to improve the education of every at-risk child. To that end, it is important to emphasize that continuity of values is very important. "Regardless of the philosophy of the program, continuity in values between home and school reduces conflict for children, reinforces learning, and eases the transitions between the two environments" (Swap, 1990, p. 9).

Coleman's 1966 study on student achievement found that family background, self-concept and a sense of control over the environment were key elements in student
achievement. Jencks (1972) used the 1966 Coleman data in a reanalysis and found that an active parent-teacher organization reflected higher scores. Leler (1983), in a review of 48 parental involvement studies, found that the greater the participation of parents, the greater the student results.

Nardine and Morris (1991) found that, although there has been 25 years of federal legislation designed to increase parental involvement, "most states have not developed adequate parent involvement policies, passed enabling legislation, or produced written guidelines" (p. 366).

However, there are some outstanding programs which work and are effective in getting parents involved in their children's education. California, according to Solomon (1991), now requires districts and schools to work on parental involvement. However, schools have much leeway in choosing how to set up their programs.

The Indianapolis public schools have established a program called Parents in Touch, the goal of which is to provide increased two-way communication between parents and the schools (Warner, 1991). This program has spawned a whole series of ancillary programs that serve to improve upon the basic component, which was established in 1978. Chrispeels (1991) offers that limited funds are usually allocated for parental involvement projects, which makes it all the more
important to find those activities that will truly improve student achievement for our at-risk population.

In 1989, the Institute for Responsive Education began a national project called Schools Reaching Out (Davies, 1991). The League of Schools reaching out is a loose confederation of schools without a common orthodoxy but with a common commitment to expanding parental involvement in the school reform movement. One of the key elements to come out of this confederation is an expansion of the definition of the term parent. Families today have, as family heads, parents and others, such as aunts, uncles, even neighbors. Support and assistance for these expanded or extended families is of paramount importance to the League.

Computer-Managed Instruction

General Description

Van Horn (1991) suggests that to prepare America for the next century we must use individualized instructional systems to meet the challenge teachers face with the great diversity of levels of accomplishment possible in every classroom. Instructional delivery systems, with computer-managed, individualized lessons and curriculum sequences, have shown "significant achievement gains--on the order of 55% as measured by standardized tests. The gains have been particularly high for at-risk populations" (p. 531).

Integrated Learning Systems (ILS), or Integrated
Instructional Systems (ILS) as they are sometimes called, are beginning to have an impact on the way we use the computer labs in our schools. The ILS formerly consisted of a collection of drill and practice programs. However, as usage increased, educators realized that the key to the ILS was not the CAI programs but the student management system. The ability to track the progress of many students simultaneously offers a strategy that is very much in vogue for working with students at risk. The instruction is specifically designed for each student. Mageau (1990) describes the history of the integrated learning system as evolving from a remedial tool to help at-risk students into a networked system for use by every student.

Mageau (1990) reports that developers are working to improve their Integrated Learning Systems in two areas: (a) enhancing performance in the form of student achievement and (b) overcoming educators' resistance to computer-based learning by making the packages cover more skills with increased depth of coverage. Hathaway (1989) describes the steps to develop a computer-managed learning system into a networked curriculum. Also, Ross (1989) describes three models for computer-managed integrated learning systems that were tested in eight separate studies comparing computer-managed and teacher-managed instructional settings. The
results indicate that, to be effective, the models must present lessons that are demanding.

Berg and Ohler (1991), in a paper about at-risk students in the Native Americans population in Alaska, believe that the industrial model on which American education is based discriminates against native populations institutionally. The future of education in Alaska involves using distance education and high technology integrated learning systems to help the native population become assimilated into mainstream society. Also, Bentley (1991) discusses problems with integrated learning systems but suggests that fundamental problems in education be settled before putting time and money into an ILS.

General Characteristics and Evaluation Models

According to Sherry (1990), the ILS consists of computer-based, networked terminals or microcomputers, courseware that spans several grade levels, lessons linked to standard curriculum, standardization with upgrading of software, and a management system which tracks and produces diagnostic/prescriptive reports and tailors lessons to individual needs. The integrated learning system individualizes instruction as a part of the design for a school of the twenty-first century.

Hopkins (1991) describes the selection of an integrated learning system in the Saturn School of Tomorrow (St. Paul,
Curlette (1991) describes an evaluation model to select an integrated learning system. The decision-making model was a part of the De Kalb County School District in Georgia. Results of the study indicated that all the integrated learning systems produced positive achievement gains. Griffin (1991) developed an implementation model and attempted to determine factors and strategies that affect implementation of integrated learning systems. Also, Lehrer (1988) and Chrisman (1992) have examined integrated learning systems and discuss factors to be considered in the selection of an integrated learning system.

Schmidt (1991) studied the effects of an integrated learning system on reading, math, and language achievement of second through sixth-grade students. Significant gains in achievement were posted for all three academic areas for low-achieving students. Similarly, positive effects on students' attitudes and motivation were found.

Zoll (1990) developed an instrument for evaluating and selecting an integrated learning system. In a study of teachers', administrators', and students' attitudes and behavior toward integrated learning systems, Mills' (1987) findings indicated the need for strong support from the ILS company. Also, the building principal was an important factor in ensuring the success of the program. Other success
factors included the need for training of the teacher and lab assistant to ensure positive attitudes and to provide a background for successful usage of the system.

Hativa (1991) summarizes the results of testing four integrated learning systems for teaching math in Israel and the United States. The results of the study indicated that ILSs are not perfected yet in the following general areas: (a) curriculum, (b) management, and (c) congruence with existing curriculum. In another ILS implementation study, Alifrangis (1990) employed test data as well as interviews, observations, student and teacher questionnaires, and document reviews to define the state of integrated learning systems and came to conclusions similar to those of Hopkins, namely that congruence with existing curriculum and cost in terms of teacher time with respect to the computer management system are of primary importance to the success of integrated learning systems as teaching devices.

Results Obtained with Integrated Learning Systems

A study of computer-managed instruction using the Apple Classrooms of Tomorrow indicated somewhat mixed, but generally favorable, results (Ross, 1989). The researchers suspect that trying to overcome long histories of failure and a disadvantaged environment were obstacles to the success of the program.
Mys and Petrie (1989) reported significant gains in math and reading scores for students engaged in an integrated learning system. Also, students and staff had positive attitudes toward the instructional medium. Overwhelmingly positive student attitudes were reported when a computer-managed instructional system was employed in two small rural Middle Atlantic schools (Research for Better Schools, 1989).

Gilman (1991) investigated the effects of the use of an integrated learning system on student achievement and student and teacher attitudes toward technology. Achievement gains were significant after the introduction of the integrated learning system. Teachers' perceptions of technology and their ability to use the ILS showed significant gains. Similarly, students also showed significant gains after the introduction of the integrated learning system.

May (1991) discusses an evaluation of three integrated learning systems. While achievement scores did not show major differences, teachers, parents, and principals all reported positive effects on student learning. Problems were reported to have included implementation and curriculum alignment.

The United States Department of Education (1986) reports that frequent and systematic monitoring of student learning helps students, teachers, and parents. Computer-managed instruction can provide much more efficient record keeping
than would be possible for teachers to track. CMI pinpoints problems and directs teachers' efforts to the appropriate activities (Stapleton, 1987). Stapleton (1987) also reports that test reports can be combined to form a student profile for diagnostic and achievement assessments.

Air Force studies indicated that the teachers' role changes from lecturer and tester to adviser and counselor with the use of computers (Stapleton, 1987). The important thing about an instructional management system is that it allows, "each student's progress to be effectively monitored and encouraged so that only the student's potential limits mastery of the subject matter" (Stapleton, 1987, p. 87).

Teachers, in this scheme, will take on the role of facilitator, and they will have more time to deal with individual student's problems. The computer will perform some of the time-consuming tasks and will remove some of the frustration inherent in teaching large classes with diverse populations. Thus, the computer will take over some of the more mundane aspects of teaching. "Being freed from some--particularly, low-level--instructional tasks and from nearly all administrative drudgery will allow teachers to assume new roles as academic coaches, group leaders, instructional designers, and innovators" (Chrisman, 1992, p. 14). The role of administrators who supervise teachers using integrated
learning systems must also change because of the difference in teaching strategies (Bailey & Lumley, 1991).

Summary

As the review of literature indicates, there is ample evidence to support the need for parents becoming more involved in their children's education. Involvement at home is not enough. Parents need to play a part in the process on every level of the educational ladder. Many parents of at-risk students have few skills with which to help their children; however, it is also true that at-risk children have the most to gain from parental involvement. The school and home do not exist in isolation from one another.

Computer-managed instruction with diagnostic-prescriptive capabilities has proven to be very helpful for the at-risk student. The needs of the at-risk population are best served by this type of instruction. Frequent assessment and highly individualized instruction in a non-threatening environment characterize the management system.

The intensity of parental involvement relates to student accomplishment. At-risk homes often do not emphasize the value of education because the parents may not believe in their ability to help their children with the lessons.

It appears there is a need to discover whether combining an alternative instructional system with increased parental
involvement will result in raising achievement, educational expectations, self-esteem, and attitude toward education.
CHAPTER 3

METHODS

Population

The population in this study consisted of students in grades 4 through 6 in a learning center of a school district located in a large southwestern metropolitan area and their parents. The students, in grades four through six represented the following ethnicity: 93.4% African-American, 6% Hispanic, and .6% Caucasian. Three percent of the students were from a shelter for the homeless. One percent of the students were LEP (Limited English Proficiency) and participated in the ESL (English as a Second Language) program. In October of 1991, the TAAS test (Texas Assessment of Academic Skills) reading subtest was administered, and only 33% passed with a grade of 70% or higher. However, when compared to students in non-learning centers, students in the learning centers performed better than their district counterparts when matched by ethnicity (Reid, 1992).

The mobility rate of the population results in a 50% turnover in the student body each school year. The percentage of students on the free meal programs averages 74%. This center is identified as one of the schools with
the largest number of economically deprived students in the school district (Reid, 1992).

Teacher demographic characteristics include the following: 90% female, 10% male. Ethnicity is 52% African-American, 42% white, and 5% other. All of the teachers at the center have three years or more of experience (Reid, 1992).

The treatment group in this study consisted of (a) those students in grades 4 through 6 whose parents participated in at least two computer training classes and (b) those parents who were identified as parent-mentors by the administration of the school. Parent-mentors were parents who were regular and positive participants in school activities.

The comparison group in the study consisted of all other students in grades 4 through 6 whose parents did not meet the criteria established for the treatment group.

Instruments

The reading comprehension subtest of the Iowa Test of Basic Skills, a norm-referenced achievement test administered annually by the district, under the auspices of the state, was used to measure student reading achievement. Two-Hundred Thirty-Five Thousand students in grades K through 9 participated in the previous norming. A standardization sample was stratified and randomly selected by size of enrollment, geographic region, socioeconomic status,
demographic data on the individual school, and indexes of achievement in the selected individual schools. Reliabilities range from .75 to .96 at K through first grade level, and from .74 to .96 at the first and second grade levels. Reliabilities for other grades exceed .87. Validity coefficients range from .45 to .67. This test was concurrently standardized with the Test of Achievement and Proficiency (TAP) and the Cognitive Abilities Test. The within grade Kuder-Richardson 20 reliabilities for the 11 subtests and total scores are high, generally greater than .85, with many exceeding .90. The K-R 20 Reliability level of the composite score for each level of the test is .98 (Hieronymus & Hoover, 1986).

How I Feel About Myself, a survey developed by the district and administered in November, 1991 and April, 1992, was used to measure students' self-esteem and achievement motivation. This survey has been given for the past six years and has internal consistency (Cronbach's Alpha) among the three sub-categories from .74 to .77.

How My Class Acts, a survey developed by the district and administered in April, 1992, was used to measure students' attitude toward school. This survey has been given for the past six years and has internal consistency (Cronbach's Alpha) among the four sub-categories from .67 to .81 (Reid, 1992). The district-developed Parent Survey was
employed to measure parental attitude toward school and administered in October, 1991, and May, 1992.

Research Design and Treatment

Students in the learning center were scheduled in the computer lab for approximately 12 sessions over a period from mid-February, 1992, to mid-April, 1992. Before each visit to the computer lab, teachers gave their classes one hour of direct instruction. The goal of the direct instruction was to prepare the class, as a whole, for the kind of information they would individually experience during the period of computer-managed instruction. While students were working on the computers, teachers were to use that time to evaluate the results of the previous computer session and design individualized homework packets for students. The instructions for each student's individualized packet were preserved on computer disk. The computer specialist then generated the homework packets for all students.

Initially, the reading subtest scores from the April, 1991 testing and supplemental student information provided by the Skills Bank II software program were used to create individual student profiles. These profiles identified areas of academic concern. As the term progressed, Skills Bank II was used to update these profiles. The teacher, therefore, had formative information on the student's strengths and weaknesses and could plan remediation before the summative
testing by the norm-referenced test, administered in April, 1992.

The parents in the study consisted of people who were members of three groups: (a) those who participated in the computer classes; (b) those who were identified by school personnel as parent-mentors; and (c) those parents who did not participate in either manner.

The community liaison visited the community in October and showed each family how to interpret the profile reports. The researcher accompanied the liaison on two days of his community visits as part of the tactics to administer the parent survey. Systematic visits to the neighborhoods produced some interesting results: Many of the addresses listed at the first of school were already out of date. Some of the street numbers listed as residences by many people were, in reality, just shells of buildings. As a result, PTA meetings and school functions were employed to increase parental participation in the surveys. Finally, the students themselves were asked to take home and bring back the finished surveys as part of a contest. That strategy produced the desired results.

The essential element in the design of the parent component of the study was the premise that parents want to participate in their children's education. As was shown in Chapter 2, there is abundant evidence in the literature of
the efficacy of parental involvement as a way to increase student achievement. In some communities, the parents' ability to assist their children beyond basic skills and life skills is limited by parents' lack of education. The parent component was also designed to provide parents with a better understanding of the learning process in the hope that the parents themselves would take advantage of opportunities to help their children in learning activities as well as take opportunities for their own personal growth. The parental computer training component was a vital part of the study; therefore, all parents who participated at least twice were considered. There were two distinct parts to the parent plan: (a) preparatory activities and (b) specialized workshops.

Preparatory activities attempted to build interest in parental participation by describing the project, showing the parents how to interpret the information developed by the instructional program, and acquainting parents with computer usage. Three parent events were used to introduce the parental component activities and encourage participation: (a) a PTA meeting, (b) a student/parent lock-in, and (c) the Oratorical Presentations night (school-sponsored event).

The PTA meeting included a presentation module about the experiment that included orientation, introduction to the
program, and understanding student scoring. Flyers were distributed at this event that described the program and listed a calendar of events. The next day the same flyer was sent home with each student.

The lock-in was a previously scheduled school-sponsored event for parents and students. Time was provided during the initial sequence of events of the lock-in for the same presentation that was made at the PTA meeting. Additionally, a computer lab session was provided consisting of three components: (a) introduction to computing, (b) student demonstrations, and (c) parental participation. Children demonstrated what they were doing during computer classes in school, and parents were invited both to watch and then later to participate in the student activities.

Finally, as the last preparatory event, parents and students again were paired at the computers during the Oratorical Presentation night. Parents were encouraged to bring friends and neighbors to these training sessions and the community liaison, as a part of his regular schedule, also worked to secure parental participation. The second part of the parental participation schedule used hands-on workshops to demonstrate the advantages of computer instruction and to help parents better understand what their children were doing in the computer lab during instruction. Practical applications as well as tool programs were
Participants studied word processing in the form of composing a résumé. Sign-making and banner-making type programs were among those demonstrated and used in the sessions. The Skills-Bank II was studied to promote a better understanding of the students' preparation for the reading test.

The computer workshops were designed to encourage parents to help their children complete the teacher-controlled, computer-generated homework packets each child brought home during the study. The workshops were divided into two sections of three days each: (a) parent/teacher and parent/student sessions and (b) parent training on specific software packages. Part one gave the teachers a chance to meet with individual parents and students to discuss progress and make suggestions for help and further study. Part two allowed parents to get personal training on the specific software packages mentioned above.

Data Analysis

1. For Research Question 1, students' scores on the reading comprehension subtest were analyzed using an analysis of covariance to determine whether there was a significant difference in the scores.

2. For Research Question 2, students' scores on the reading comprehension subtest were analyzed using an analysis
of covariance to determine whether there was a significant difference in the scores.

3. For Question 3 students' scores on the self-esteem portion of the district climate survey were analyzed using an analysis of variance.

4. Students' scores on the attitude toward school portion of the district climate survey were analyzed using an analysis of variance.

5. Parents' scores on the attitude toward school portion of the School District Parent Climate Survey were analyzed using percentages of yes and no answers on the climate questions.
CHAPTER 4

RESULTS

The purpose of this study was to determine whether using integrated, networked testing and skills software combined with parental participation would increase students' achievement in reading, increase students' self-esteem, and improve their attitude toward school. Further, the purpose was to determine if parental participation promotes improved attitude toward school. The results of the study are presented in five sections. The sections are divided according to the five research questions presented in Chapter 3.

The first section describes the results obtained in the measurements for Research Question 1. The purpose was to determine the difference in reading achievement between students whose parent(s) participated in parent computer classes and those students whose parents did not participate. The instrument used to measure student reading achievement was the reading subsection of the norm-referenced achievement test. The second section pertains to Research Question 2, which sought to determine if there was a difference in reading achievement between students whose parent(s) were
identified as parent-mentors and those students whose parents were not identified as parent mentors. Again the reading subsection of the norm-referenced achievement test was employed as the testing instrument. The third section contains Research Question 3, which investigated whether there was a change in student self-esteem after participation in a computer-managed reading program. How I Feel About Myself, the district's student self-esteem survey, was used as the measurement device. Research Question 4 sought to determine the difference in attitude toward school between students whose parents participated in parent computer classes and those students whose parents did not participate in parent computer classes. The measurement instrument for this question was the district's attitude survey, How My Class Acts. The fifth section, concerning Research Question 5, sought to determine whether there was a difference in parental attitude toward school between parent-mentors and other parents. The district's parent survey for the learning centers was employed as the attitude measure.

The design and the intent of these questions was to determine if an integrated learning system with parental involvement has a significant impact on student reading achievement, student self-esteem and attitude toward school, and parental attitude toward school. The measurement device for reading achievement is an industry standard. The
district's student and parent surveys were developed as a result of a court order and are the standard means of assessing attitudes of the students and parents who live in the learning center attendance areas. The statistical packages used in these analyses were SPSS Macintosh and Statistica Mac.

Research Question 1

The first research question sought to determine if there was a difference in reading achievement between students whose parent(s) chose to participate in parent computer classes and those students whose parents did not choose to participate. The data were collected in the form of scores on the reading subsection of the norm-referenced achievement test.

In a pretest/posttest control group design, the use of multiple t tests can result in significant differences that do not really exist. In order to control for this possibility, Campbell and Stanley (1963) suggest the use of an analysis of covariance where the posttest means are compared, with the pretest used as a covariate. In accordance with established procedure, an analysis of covariance was used at the ninety-five percent probability level (p < .05). The results (shown in Table 1) indicated that there was no significant difference between the treatment and comparison groups (F = 3.205; p = .075).
Table 1

Analysis of Covariance on Student Achievement By Computer Parents and Comparison Group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pretest Mean</th>
<th>Posttest Mean</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Computer parents</td>
<td>10</td>
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<td>27.406</td>
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<tr>
<td>Comparison group</td>
<td>132</td>
<td>23.681</td>
<td>23.053</td>
<td>3.206</td>
<td>.075</td>
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</tbody>
</table>

Research Question 2

The second research question asks if there is a difference in reading achievement between students whose parent(s) are identified as parent-mentors and those students whose parents are not identified as parent-mentors. The data are presented in the form of scores on the reading subsection of the norm-referenced achievement test.

In accordance with established procedure, an analysis of covariance was used at the ninety-five percent probability level ($\alpha < .05$). The results (shown in Table 2) indicate a significant difference between the scores of the students whose parents are parent-mentors and the comparison group ($F = 6.785; p = .010$).
Table 2

**Analysis of Covariance on Student Achievement By Parent Mentors and Comparison Group**

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Pretest mean</th>
<th>Posttest mean</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent-mentors</td>
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<td>27.733</td>
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</tr>
<tr>
<td>Comparison group</td>
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<td>23.681</td>
<td>23.053</td>
<td>6.785</td>
<td>.010</td>
</tr>
</tbody>
</table>

**Research Question 3**

Research Question 3 sought to measure the difference in students' self-esteem before and after participation in a computer-managed reading program. The data were collected in the form of the district survey, How I Feel About Myself. The survey was divided into pre-existing factors determined by the school district. The factors included (a) academic self-concept (home-based), (b) academic self-concept (school based), and (c) achievement motivation (effort). Group membership consisted of students whose parents were (a) computer parents, (b) parent-mentors, and (c) comparison group. A total score was obtained by combining the scores on all the items of the survey and averaging them. This total
score was used as the dependent variable in the preliminary analysis, which sought to identify any pretest differences among the three groups. No significant differences were obtained ($F = 0.2868, p = 0.7511$) as shown in Table 3.

Table 3

Comparison of Three Groups Using Self-Esteem Pretest Total as the Dependent Measure

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<tr>
<th></th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>$F$</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>0.0117</td>
<td>0.0059</td>
<td>0.2868</td>
<td>0.7511</td>
</tr>
<tr>
<td>Within groups</td>
<td>132</td>
<td>2.6981</td>
<td>0.0204</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>134</td>
<td>2.7098</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Group | n  | Mean | Standard deviation | Group              |
-----|----|------|--------------------|--------------------|
1    | 6  | 2.222| 0.1571             | Computer parent    |
2    | 12 | 2.180| 0.1211             | Parent-mentor      |
3    | 117| 2.709| 0.1442             | Comparison         |
Table 4
Comparison of Three Groups Using the Difference Between Pretest and Posttest as the Dependent Variable

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F</th>
<th>F Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>102.877</td>
<td>51.438</td>
<td>1.807</td>
<td>.1677</td>
</tr>
<tr>
<td>Within groups</td>
<td>151</td>
<td>4298.524</td>
<td>28.467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>4401.402</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>-1.571</td>
<td>3.598</td>
<td>Computer parent</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>2.000</td>
<td>5.438</td>
<td>Parent-mentor</td>
</tr>
<tr>
<td>3</td>
<td>132</td>
<td>0.628</td>
<td>5.390</td>
<td>Comparison</td>
</tr>
</tbody>
</table>

The difference between the posttest total and the pretest total was computed and was used as the dependent variable in a one-way analysis of variance to compare the groups with one another. The difference in the means (rather than the actual means) was used, because this allowed for the reduction of the total number of analyses by one half, thereby reducing the chance for a Type I error. Because
participants had different pretest scores, computing such a standardized score for each was deemed necessary. The results are shown in Table 4. There were no significant differences between the posttest scores on any factor for any subgroup.

Research Question 4

Research Question 4 sought to determine whether there was a difference in attitude toward school between students whose parents chose to participate in parent computer classes and those students whose parents did not choose to participate. The district's survey, How My Class Acts, was used to measure students' attitude toward school. The district divided the survey into four factors labeled: (a) satisfaction with learning, (b) friction among students, (c) cooperation among students, and (d) cohesiveness among students. For purposes of this study, these factors were retained. The factors were formed by adding the scores on the items in each factor together and averaging them. Four separate analyses of variance were performed for each of the factors, using the factor score as the dependant variable to compare the three groups to each other. No significant differences were found. These results are displayed in Tables 5, 6, 7, and 8.
Table 5
Comparison of three Groups using Satisfaction with Learning as the Dependent Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F</th>
<th>E</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.0536</td>
<td>.0268</td>
<td>.1918</td>
<td>.8257</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>108</td>
<td>15.0832</td>
<td>.1397</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>15.1368</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>2.080</td>
<td>.5215</td>
<td>Computer parent</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>2.053</td>
<td>.3159</td>
<td>Parent-mentor</td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>2.090</td>
<td>.3706</td>
<td>Comparison</td>
</tr>
</tbody>
</table>

Table 6
Comparison of the Three Groups Using Friction Among Students as the Dependent Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F</th>
<th>E</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>df</td>
<td>Sum of Squares</td>
<td>Mean Squares</td>
<td>E Ratio</td>
<td>Prob.</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>----</td>
<td>----------------</td>
<td>--------------</td>
<td>---------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.0430</td>
<td>.0215</td>
<td>1.544</td>
<td>.8572</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>108</td>
<td>15.0594</td>
<td>.1394</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>15.1025</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1.900</td>
<td>.3791</td>
<td>Computer parent</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>1.833</td>
<td>.3619</td>
<td>Parent-mentor</td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>1.890</td>
<td>.3749</td>
<td>Comparison</td>
</tr>
</tbody>
</table>

Table 7
Comparison of the Three Groups Using Cooperation Among Students as the Dependent Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean Squares</th>
<th>E Ratio</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.0175</td>
<td>.0088</td>
<td>0.638</td>
<td>.9383</td>
</tr>
<tr>
<td>Within groups</td>
<td>108</td>
<td>14.8464</td>
<td>.1375</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>14.8640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>n</td>
<td>Mean</td>
<td>Standard deviation</td>
<td>Group</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----</td>
<td>-------</td>
<td>--------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>2.080</td>
<td>.5215</td>
<td>Computer parent</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>2.053</td>
<td>.3159</td>
<td>Parent-mentor</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>2.090</td>
<td>.3706</td>
<td>Comparison</td>
<td></td>
</tr>
</tbody>
</table>

Table 8
Comparison of Three Groups Using Cohesiveness Among Students as the Dependent Variable.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.1507</td>
<td>.0753</td>
<td>.5599</td>
<td>.5729</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>108</td>
<td>14.533</td>
<td>.1346</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>14.8640</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>2.240</td>
<td>.4561</td>
<td>Computer parent</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>2.040</td>
<td>.2640</td>
<td>Parent-mentor</td>
</tr>
<tr>
<td>3</td>
<td>91</td>
<td>2.084</td>
<td>.3654</td>
<td>Comparison</td>
</tr>
</tbody>
</table>
Research Question 5

Research Question 5 was designed to determine if there was a difference in attitude toward school between parent-mentors and other parents. The district's learning center parental attitude survey was employed to measure this attitude. The survey was also designed to provide additional demographic information about the parent population in the school's attendance area. This information is typically employed by the school to determine who might become a parent volunteer, what kind of adult education programs the center should provide for the local residents, and general information regarding parent-child and parent-teacher relationships.

The questions on the survey which pertain to parental attitude toward the learning center are presented in the following series of tables and figures. Responses are listed in terms of percentage of total answers. The response categories for the district's parent survey include the following: (a) 1 = Yes; (b) 2 = No; (c) 3 = New to center/district; (d) 4 = Don't know. Answer categories 3 and 4 constitute a small number of responses. People who answered in categories 3 and 4 did not have an opinion or had not had enough time to form an opinion about the learning center. For purposes of observing differences in attitude toward
school, answers 1 and 2 were employed to measure positive and negative attitudes towards the subject of each question.

Question 10 concerns the physical appearance of the center. (One of the key concerns of the court order allowing a return to the neighborhood school concept was the promise of the district to provide physical plants as good as or better than those in more affluent areas of the city). The results are shown in Table 9 and Figure 1. Total positive responses from parents in the treatment group improved from 94% to 100% from pretest to posttest. Positive responses from parents in the comparison group increased from 86% to 87%. Negative responses for the treatment group changed from 6% to 0%. Negative responses for the comparison group changed from 11% to 8%.

Question 11 concerns the perceived quality of the learning environment at the learning center. This question relates to the overall impression of the center academically, as Question 10 relates to the overall physical facilities of the building. Results of this analysis are presented in Table 10 and Figure 2. The treatment parents maintained a 100% approval rate from pretest to posttest. The comparison group dropped from 92% to 90%. The negative responses of the comparison group increased from 5% to 7.7%.

Question 12 relates to the perception parents have of teachers' academic expectations for children attending the
Figure 1. Percentage of yes and no responses: Pretest and posttest Question 10.

Table 9

Question 10: Pretest and Posttest Answers by Percentage

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th></th>
<th></th>
<th></th>
<th>Posttest</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Treatment</td>
<td>94</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Comparison</td>
<td>86</td>
<td>11</td>
<td>0</td>
<td>3</td>
<td>87</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Treatment \(n\): pretest = 18; posttest = 18
Comparison \(n\): pretest = 39; posttest = 39
Figure 2. Percentage of yes and no responses: Pretest and posttest Question 11.

Table 10

Question 11: Pretest and Posttest Answers by Percentage

Question 11: Does this center seem to be a good place for your child to learn?

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th></th>
<th></th>
<th>Posttest</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>100 0 0 0</td>
<td>100 0 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison</td>
<td>92 5 0 3</td>
<td>90 7.7 0 2.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n: pretest = 18; posttest = 18

n: pretest = 39; posttest = 39
Figure 3. Percentage of yes and no responses: Pretest and posttest Question 12.

Table 11

Question 12: Pretest and Posttest Answers by Percentage

<table>
<thead>
<tr>
<th>Question 12: Do the teachers at this center expect children to do their best?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Treatment</td>
</tr>
<tr>
<td>Comparison</td>
</tr>
</tbody>
</table>

Treatment \( n: \) pretest = 18; posttest = 18
Comparison \( n: \) pretest = 39; posttest = 39
center. The results of this analysis are presented in Table 11 and Figure 3. The largest gain in approval came from the treatment group from pretest to posttest with an increase from 83% to 100%. The comparison group approval rate dropped from 89% to 87%. Negative responses for the treatment group decreased from 11% to 0%. The negative responses of the comparison group increased from 5% to 10%.

Question 13 relates to how the parents feel about the center. The results of this analysis are contained in Table 12 and Figure 14. The approval rate for the treatment group was uniform with 100% on both pretest and posttest. The approval rate of the comparison group dropped from 89% to 85%. The negative rate for the comparison group decreased from 8% to 5%.

Question 14 relates to feelings that students have for the learning center. Results of this analysis are presented in Table 13 and Figure 4. The approval rate for the treatment group was uniform with 100% on both pretest and posttest. The approval rate of the comparison group dropped from 91% to 82%. The negative rate for the comparison group increased from 6% to 13%.

Question 15 relates to perceived comfort level for parents when they are in the learning center. Results of this analysis are shown in Table 14 and Figure 6. The parents in the treatment group expressed a uniform and
Figure 4. Percentage of yes and no responses: Pretest and posttest Question 13.

Table 12

Question 13: Pretest and Posttest Answers by Percentage

<table>
<thead>
<tr>
<th>Question 13: Are you proud of this center?</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Comparison</td>
<td>89</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Treatment n: pretest = 18; posttest = 18

Comparison n: pretest = 39; posttest = 39
Figure 5. Percentage of yes and no responses: Pretest and posttest Question 14.

Table 13

Question 14: Pretest and Posttest Answers by Percentage

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Treatment</td>
<td>100 0 0 0</td>
<td>100 0 0 0</td>
</tr>
<tr>
<td>Comparison</td>
<td>91 6 3 0</td>
<td>82 13 0 5</td>
</tr>
</tbody>
</table>

Treatment \( n \): pretest = 18; posttest = 18
Comparison \( n \): pretest = 39; posttest = 39
Figure 6. Percentage of yes and no responses: Pretest and posttest Question 15.

Table 14

Question 15: Pretest and Posttest Answers by Percentage

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>100 0 0 0</td>
<td>100 0 0 0</td>
</tr>
<tr>
<td>Comparison</td>
<td>96 4 0 0</td>
<td>90 7.7 0 2.3</td>
</tr>
</tbody>
</table>

Treatment: $n$: pretest = 18; posttest = 18
Comparison: $n$: pretest = 39; posttest = 39
Figure 7. Percentage of yes and no responses: Pretest and posttest Question 16.

Table 15

**Question 16: Pretest Posttest Answers by Percent**

<table>
<thead>
<tr>
<th>Question 16: Has your child made progress at this center?</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4</td>
<td>1  2  3  4</td>
</tr>
<tr>
<td>Treatment</td>
<td>94 6 0 0</td>
<td>100 0 0 0</td>
</tr>
<tr>
<td>Comparison</td>
<td>94 6 0 0</td>
<td>92 5.3 0 2.7</td>
</tr>
</tbody>
</table>

**Treatment**

n: pretest = 18; posttest = 18

**Comparison**

n: pretest = 39; posttest = 39
Figure 8. Percentage of positive responses for treatment group on pretest and posttest.

Figure 9. Percentage of positive responses for comparison group on pretest and posttest.
constant approval rating from pretest to posttest with a 100% yes response. The approval rating of parents in the comparison group decreased from 96% to 90% from pretest to posttest. The negative response for the parents of the comparison group changed from 4% to 7.7%, for an increase of 3.7%.

Question 16 relates to the perception that parents have regarding whether their children make progress in the learning center. Results of this analysis are shown in Table 15 and Figure 7. The treatment group improved the positive responses from 94% to 100% from pretest to posttest. The comparison group approval rate dropped from 94% to 92%. Both groups had a decrease in negative responses. The treatment group moved from 6% to 0%. The comparison group dropped from 6% to 5.3.

Figure 8 displays the percentages of positive responses for the treatment group on both the pretest and the posttest. Figure 9 displays the percentages of positive responses for the comparison group on both the pretest and the posttest. The overall trend is for lowered positive responses. For the treatment group, there were only three questions that had response totals less than 100% on the pretest. All three questions rose to 100% on the posttest. For the comparison group, there was a general downward trend from pretest to posttest.
CHAPTER 5

CONCLUSIONS

Summary

The purpose of this study was to determine whether using integrated, networked testing and skills software combined with parental participation would increase students' achievement in reading, improve students' self-esteem, and improve students' attitude toward school. Further, the purpose was to determine if parental participation promotes improved attitude toward school.

The review of the literature found that integrated learning systems generally have produced positive results. For students to be more productive in the lab, direct instruction needs to precede trips to the computer room in order to prepare students for the lessons to follow. Moreover, the curriculum and the software must be coordinated for the system to have an impact.

The multisensory nature of computer-managed learning fits a variety of learning styles and increases the chances of reaching all students in the classroom. The computer has the characteristic of being nonjudgmental and transcends cultural boundaries in our increasingly multicultural society. Inhibitions that at-risk students may feel in a regular classroom setting are eliminated by the use of the
computer to track and manage individualized instruction. This individualization of instruction and individualized instructional management help to lessen the differences that diverse populations bring to the classroom setting.

Parental participation is now regarded as an essential element in the education of at-risk populations. Parents must do more than attend organization meetings and school plays, concerts, and productions; they must be active in all phases of their children's education. The home-school connection produces the most significant results with those who need help the most. There is a strong correlation between higher levels of achievement and strong parental participation in the educational process. There is increasing agreement that, in order to break the cycle of poverty, parents must strive to better their own situation as well as that of their children.

This study examined the test scores on a norm-referenced reading achievement test for students who had participated in an integrated testing and skills computer-managed reading program. Students were divided into treatment and comparison groups based on whether or not their parents participated in adult computer classes. Also, other students were included in the treatment group based on their parents' regular and personal participation in activities at the school. These parents were identified by the school
administration and faculty as strong supporters and were labeled as mentors.

Scores on the reading subsection of a nationally recognized norm-referenced test were the measure of student achievement. Self-esteem and students' attitudes toward school and parents' attitudes toward school were also examined using instruments developed by the school district.

Analyses of the data were performed using SPSS Macintosh and Statistica Mac on Macintosh II and SE/30 computers, respectively. Analyses of covariance were used to measure the difference in reading subtest scores. Analyses of variance were used to measure attitude toward school and self-esteem for students. The parent survey questions were examined using descriptive statistics.

The special school is called a learning center. The learning center concept was a special creation of the federal courts to preserve the neighborhood school concept. It was designed to ensure that disadvantaged children receive the best instruction the school district has to offer by providing increasing spending and extending day programs before and after school. There are also special enrichment opportunities for a carefully selected faculty and staff.

A special creation of the court ordered learning center concept is a staff position called the community liaison. The community liaison is a person who plays a key part in the
implementation of the learning center model. The liaison provides a direct connection between the school and the school community by visiting the homes of the parents in the school's attendance area. The liaison functions as a provider of general information about school, community services, and testing information. He also provides important information about the community to the school administration and faculty.

The implementation of the computer-managed reading program began with the installation of networked software which had the capability of managing student progress. Students from the fourth through the sixth grades made trips to the computer room to work on reading comprehension in preparation for the norm-referenced reading achievement test to be given in late spring 1992. Parents were also invited to participate in specially organized computer classes that provided job skills training and reading instruction. Students were issued homework packets periodically, based on the diagnostic and prescriptive powers of the software package. The idea was for the parents to help the children on the homework packets to increase cooperation and collaboration between parents and children on the children's school work.
Discussion

This study afforded a special opportunity for reading research. It featured a unique combination of people and machines. At-risk students, in a special school, in an urban setting, used an integrated testing and diagnostic skills-building computer program to improve reading scores. The other key feature of the program, parental involvement, sought not only to involve parents in their children's education, but also sought to improve parental attitudes toward education in the hopes of getting parents to improve their own educational level. All this took place in a school located in an area with the highest crime rate in the city, a city with one of the highest crime rates in the nation.

Students loved going to the computer room. In fact, children had to be gently pushed out the door at the end of the day, after the extended day programs ended. They did not want to go home. The computer room was an exciting and safe place. There were only advantages to being there.

The parents in the study love their school also. This school represents a tangible reminder that the school district is making a good faith effort to eliminate all the vestiges of racial discrimination. The facilities are first rate. The teachers are experienced and have the reputation of being among the better teachers in the district. Teachers are encouraged to participate in special activities such as
conferences, clinics, and conventions. Budgets do not get cut at the learning centers. Supplies and materials exist in abundance.

This study was designed in cooperation with three administrators at the learning center. Their experience as both teachers and administrators provided them with vital information not readily available and possibly not apparent to other researchers who might be from different locales and backgrounds. The study was based on sound research and personal experience in working with disadvantaged youth, many of whom were at risk of dropping out of school. The idea was to develop a new model for dealing effectively with reading improvement by taking advantage of two resources identified as potentially great resources for improving learning:
(a) integrated learning systems and (b) parents as helpers, mentors, and active members of the school community. The review of the literature showed that those two elements could have a strong impact on a diverse population such as the population at the learning center. The computer, without being obtrusive, can serve the needs of different learning styles as well as manage the instruction of all students efficiently and carefully.

Parents are special helpers for their children and the school. It is possible that parents who participate in computer classes may be able to break the bonds of poverty by
using education to attack the problem in two places: parent and child. Both parent and child will profit from educational advancement. Parents can help their children with homework. They can give advice and encouragement to their children regarding school matters, based on personal experience, so that the words of encouragement will be more meaningful to the child. Parents will benefit from greater employment opportunities bringing more money into the household. Children will benefit from the effects of better housing, better clothing, and better care. All will benefit when many more people make a positive contribution to society.

Reading scores were also chosen as a target for improvement because the students at the center had already shown gains in other areas of the curriculum. The only area the learning center failed to improve was reading achievement. This was a logical place to start because reading is a fundamental necessity for continued student growth and academic achievement. Teachers also had a keen interest in raising reading scores above the school district’s midpoint score on the reading achievement test. They had the opportunity to earn merit pay for raising test scores wherever the scores were below average. Therefore, teachers had more than one reason to be interested in this project.
There were several mitigating circumstances which resulted in many problems concerning the implementation of this study including (a) a lack of instructional leadership and commitment by the principal and the dean of instruction, (b) a lack of feeling of ownership by the teachers involved in the project, (c) not enough time for the computer program to affect student achievement, and (d) a dearth of parental involvement.

The first problem concerns the fact that the school district transferred the three administrators who were initially involved in the project. The administrators were all promoted or moved to a new school. This created a leadership gap at the local building level which was never corrected. The lack of a feeling of administrative ownership in the project created a situation similar to a rudderless boat, subject to the whimsy of the ocean current. Vital deadlines were missed, which meant equipment was not delivered and not installed on time.

The dean of instruction missed many deadlines during the course of the experiment. Plans were adopted and modified, often more than once, to accommodate her lack of interest. The dean's initial interest in the project was positive, but there was not much follow-through. The researcher, with the help of the computer teacher, intervened to ensure that tasks were accomplished. The parental involvement portion suffered
the most as activities had to be constantly readjusted to fit the shrinking time frame resulting in lost opportunities to involve more parents.

The community liaison, while initially very helpful, lost interest in the study because he had been promoted to a new position at the end of the school year. He did not participate in the follow-up parent survey. In fact, the school district, contrary to its original stated intent, decided to produce a different parent survey. This survey was partially completed by the community liaison at the time that the project's parent survey was to be administered. It is interesting to note that the partially completed survey was never completed or turned into the district. (That fact was mentioned in the school district annual report.)

This same lack of ownership was manifested by the initial behavior of the faculty toward the project. Teachers were not informed about the project until after school had begun. Information was given to them as a part of their regular faculty meetings. No special time was devoted to an explanation of the program. The faculty did not have sufficient time to embrace the idea of a computer-managed reading program. When fully informed of the scope and significance of the study and the possibilities for increasing student achievement, teachers expressed positive attitudes toward the project and dismay that they had not
been told sooner. Their reluctant attitude was based not on resistance to computer-managed instruction but on lack of information about the situation. This problem should not occur during the second year of the program.

The short time actually spent in the lab also probably kept the reading achievement scores lower than they could have been. The attitude and self-esteem measurements would probably be different with more time also. The delays in delivery of equipment and the absence of adequate training on the use of the software constituted the major part of the delay in implementation of the program. Problems with the equipment existed because one manufacturer refused to install the complete computer system. One of the circuit boards was not of its manufacture. The manufacturer did not want to be held accountable for problems that might arise because of incompatibility or breakdowns resulting from failure of the circuit board which it had not manufactured.

Extensive efforts were made to solicit parental involvement. The researcher attended PTA meetings and other school functions. Numerous trips to the site were made to encourage the staff to take an active role in the project and to volunteer to help when needed. The liaison took the researcher into the community to give the surveys to the neighborhood parents. Signs, flyers, and letters were
printed to advertise the computer courses and to solicit parental involvement.

The best way found to secure parents' participation and to collect the survey instruments was to go through the children. Pizza parties for the classes with the highest rate of return were the only way to secure enough returns to have a survey, because the liaison did not offer assistance in securing the surveys. Parents did attend school functions where their children were performers, and they were recruited for the computer classes at these functions. Each of these functions had a festive atmosphere and food was served, so the parents seemed more amenable to the project.

Findings

1. There were no significant differences in student achievement on the norm-referenced reading subtest between students whose parents participated in computer classes and those parents who chose not to participate. The length of the program probably affected this--it was too short to produce more positive results. Also, the teachers were experiencing a learning curve and will use the computer room more effectively during the next school year.

2. There was a significant difference in student achievement between students whose parents were parent-mentors and students whose parents were in the comparison group. The students in the parent-mentor group did better on
the reading subtest than the students in the comparison group. There has been much research over the last 20 years to support this finding: Parents who take an active role in their children's school life have a significant impact on student achievement.

3. There was no significant difference between the two groups in student self-esteem. Students may not have had a significant adjustment period and, consequently, experienced no change in feelings related to the success or failure of the reading program. Also, the small cell sizes for both components of the treatment group were probably a contributing factor. The grouping of students could only be accomplished after the parental component was completed. The brevity of the parental component (six weeks rather than six months as planned) had an adverse effect on parental participation and, subsequently, treatment group size. One other factor here that affected the results was the 50% mobility of the population of the center. Obtaining complete data for many students was not possible.

4. There was no significant difference between the groups concerning attitude toward school. This also may be attributed to the short time the program was in effect. Attitude toward school may be affected by numerous factors that occur every day of the school year. Also, the same
factors that affected Research Question 4 may influence this finding.

5. There was a consistent characteristic of the study: The pretest scores for the two treatment groups were higher than the comparison group.

6. There was a marked difference between the responses of the parents in the treatment group and the comparison group in the parent attitude survey. It should be noted that the lowest percentage of positive answers was 83%, which shows that the community, even before the experiment, had a high degree of approval for the learning center. Indeed, the learning center is a source of pride for parents and students. The facilities are rated highly. Teachers have a high degree of interest in their students. They also have high standards and expectations for their students. The differences in the results may be attributed to the impact this study has had on parental attitude. The posttest results for the treatment group are better than those of the comparison group.

Conclusions

The purpose of this study was to determine whether using integrated, networked testing and skills software combined with parental participation would increase students' achievement in reading, increase students' self-esteem, and improve students' attitude toward school. Further, the
purpose was to determine if parental participation improved attitude toward school. The findings support the contention that parent-mentors can have a significant and positive effect on student achievement.

Students in the mentor group had higher scores on the reading test than did other students. This study adds to the existing body of knowledge about learning in this area.

If parent-mentors can have a significant effect on student achievement, then it is reasonable to assume that computer parents can achieve the same results. The fact that some parents took their time to come to school and learn how to use the computer and study the same programs their children were using indicates their will and desire to help themselves and their children. One of the prime characteristics of the parent-mentors is their willingness to be participatory parents, not just meeting attenders.

The self-esteem and achievement motivation measures (How I Feel About Myself and How My Class Acts) may produce the desired positive results. However, the program of reading instruction should be longer. Again, the brevity of the experiment hindered the development of new observable behaviors.

Recommendations

The results of this study suggest the following recommendations for further study:
1. The first thing to accomplish in such a project is to enlist the interest of the faculty and staff in order to instill in them a sense of ownership in the study and a sense of responsibility for the successful completion of the study.

2. Administrators who do not know how to manage a research project need to be informed of how to adhere to guidelines to prevent compromising the results of the study.

3. Equipment should be ordered only after checking out compatibility requirements.

4. In large urban districts, appropriate channels should be established for communication between the various departments to speed communication and to ensure prompt cooperation with requests.

5. Communication with parents should be a top priority. Parents are one key to the success of such an endeavor.

6. The project itself should begin earlier and last longer in order to have a greater effect on student achievement.

7. Teacher training in the use of the network is needed to increase use and lower anxiety levels for teachers.

8. Staff development for the teachers is very important. Teachers should understand what the software can accomplish for them to increase their sense of ownership of the endeavor. Also, the method of instruction employed here is very important. The period of direct instruction just
before going to the lab is an important prelude to a successful session in the lab for all students.

9. Parent education programs should be emphasized so that the community is aware that they can be educated at night while their children can be educated in the daytime.

Need for Future Study

This study should be repeated. The success of the parent-mentor group indicates that parental participation can have a significant effect on student achievement. The positive attitudes of both the students and parents offer further proof that these kinds of programs offer hope and a sense of accomplishment for the disadvantaged. The computer parent group should, over time, produce similar results.

This study should be repeated in a different setting. The urban, disadvantaged youth in the study responded positively to the project. The next study should examine a different population. Perhaps this study should be repeated in a suburban middle class or upper middle class setting.

Another possibility is to establish the learning center as a testing center where other schools could send their students. The program could serve a larger clientele. What teachers would not want to know in January, for instance, the probable scores their students would make on an achievement test normally given three months later, just before school is out?
It would be interesting to compare the different types of parental participation from all of these groups. All parents want to help their children learn. Some parents are better prepared to do that than others. Also, another factor to study might be the time parents have to spend helping their children.

Another possibility would be to do a study of non-participants, rather than mentors. This kind of study would eliminate any possibility that there were differences in the treatment and comparison groups before the study began.

In summary, other studies of this type with different populations based on socioeconomic status should be undertaken. The program should be lengthened to one year in order to study the effect of the program after two administrations of the reading test. Parental involvement should be also studied based on the time parents actually spend with their offspring in study. Finally, qualitative interviews from both students and parents would provide additional and valuable information regarding computer-managed instruction and parental involvement.
**Learning Center Survey**  
**How My Class Acts**  
1991-1992

Directions: We want to know what you see in your class. Using a number 2 pencil, darken the circle next to your response.

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<tbody>
<tr>
<td>1.</td>
<td>In my class the students <strong>like each other.</strong></td>
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<td>often</td>
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<td>2.</td>
<td>In my class, the students <strong>play together.</strong></td>
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<td>3.</td>
<td>In my class, the students <strong>disrupt the class.</strong></td>
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<td>often</td>
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<td>4.</td>
<td>In my class, the students <strong>take up for each other.</strong></td>
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<td>often</td>
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<td>5.</td>
<td>In my class, the students <strong>trust each other.</strong></td>
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<td>often</td>
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<td>6.</td>
<td>In my class, the students <strong>pick on each other.</strong></td>
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<td>often</td>
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<td>7.</td>
<td>In my class, the students <strong>are friendly.</strong></td>
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<td>8.</td>
<td>In my class, the students <strong>blame each other.</strong></td>
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<td>often</td>
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<td>9.</td>
<td>In my class, the students <strong>agree with each other.</strong></td>
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<td>often</td>
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<td>10.</td>
<td>In my class, the students <strong>like to learn new things.</strong></td>
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<td>11.</td>
<td>In my class, the students <strong>try even if it is hard.</strong></td>
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<td>often</td>
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<td>12.</td>
<td>In my class, the students <strong>are bored.</strong></td>
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<td>often</td>
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<td>13.</td>
<td>In my class, the students <strong>learn a lot.</strong></td>
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<td>often</td>
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<td>14.</td>
<td>In my class, the students <strong>want to please the teacher.</strong></td>
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</tbody>
</table>
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 15. | In my class, the students **enjoy the class.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 16. | In my class, the students **think that learning is fun.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 17. | In my class, the students **find the class too easy.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 18. | In my class, the students **would like to be elsewhere.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 19. | In my class, the students **help each other learn.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 20. | In my class, the students **work by themselves.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 21. | In my class, the students **share ideas.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 22. | In my class, the students **try to finish vote.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 23. | In my class, the students **work in small groups.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 24. | In my class, the students **explain work to each other.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 25. | In my class, the students **listen to each other.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 26. | In my class, the students **ask tough questions.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

| 27. | In my class, the students **compare each other's work.** |
|   | ○ often  
|   | ○ sometimes  
|   | ○ never  

### Learning Center

#### How I Feel About Myself

1991-1992 Student Climate Survey

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Homeroom:</th>
<th>Teacher:</th>
<th>Grade:</th>
<th>Section:</th>
</tr>
</thead>
</table>

**Directions:** We want to know how you feel about yourself. Using a number 2 pencil, darken the circle next to your answer.

1. I try my best in school.
   - ○ often
   - ○ sometimes
   - ○ never

2. I do my homework.
   - ○ often
   - ○ sometimes
   - ○ never

3. I listen in class.
   - ○ often
   - ○ sometimes
   - ○ never

4. I try to get good grades.
   - ○ often
   - ○ sometimes
   - ○ never

5. I pay attention in class.
   - ○ often
   - ○ sometimes
   - ○ never

6. My grades come from hard work
   - ○ often
   - ○ sometimes
   - ○ never

7. I believe that good grades will help me later in life
   - ○ often
   - ○ sometimes
   - ○ never

8. I continue with school work even if it is hard
   - ○ often
   - ○ sometimes
   - ○ never

   - ○ often
   - ○ sometimes
   - ○ never

10. My teachers think I am smart.
    - ○ often
    - ○ sometimes
    - ○ never

11. My family thinks I can make good grades.
    - ○ often
    - ○ sometimes
    - ○ never

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*Please Turn Over*
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<table>
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<tbody>
<tr>
<td>12. Other children think I am smart</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>13. My family thinks I can learn in school</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>14. My teachers call on other students more than me</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>15. I am as smart as others in my class</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>16. I am smarter than my teacher thinks I am</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>17. My teachers like my school work</td>
<td>○ often</td>
<td>○ never</td>
</tr>
<tr>
<td>18. My friends do better in school than me</td>
<td>○ often</td>
<td>○ never</td>
</tr>
</tbody>
</table>
APPENDIX B
Learning Center
Parent Survey

Directions: Please select the response which best answers each of the questions. Record: 1 = Yes; 2 = No; 3 = New to Center/DISD 4 = Don't Know

1. Have you ever been a school or center volunteer?
2. Have you ever been asked to be a school or center volunteer?
3. Would you like to be a school or center volunteer this year?
4. Please check the things you would be willing to do as a volunteer.
   - Home room parent
   - Helping in the office
   - Telephoning for parent meeting
   - Helping with fundraising
   - Dads' Club
   - Parent Advisory Committee
   - Parent/Teacher Association
   - Community Advisory Committee
   - Tutoring in after-school program
   - Helping in the cafeteria
   - Helping in the media center
   - Field trip chaperone
   - Student club sponsor
   - Boy Scouts
   - Girl Scouts

5. Please check when you could volunteer.
   - Before school
   - Morning
   - Lunchtime
   - Afternoon
   - After school

6. Do you know that adult education classes will be at this center?
7. Please check the adult education classes you would be interested in taking.
   - GED
   - ESL
   - Reading
   - Mathematics
   - Computers
   - Aerobics/Sports
   - Job training/Job search skills

8. Last year, were you asked to participate in planning any school or classroom activities for your school or center?
9. Last year, did you participate in planning any school or classroom activities for your school or center?
10. Is this center clean and attractive?

11. Does this center seem to be a good place for your child to learn?
12. Do the teachers at this center expect children to do their best?
13. Are you proud of this center?
14. Is your child proud of this center?
15. Do you feel welcome when you visit this center?
16. Has your child made progress at this center?
17. Do you help your child with her/his homework?
18. Does your child need more help with her/his homework?
19. Would you attend training sessions to help you learn how to help your child?
20. Are you aware of this center's expectations for parents and students?
21. Do you understand your child's report card?
22. Do you understand your child's test scores?
23. Do you need more information about the programs and activities offered at this center?
24. As a parent, do you have trouble:
   - Talking to your child?
   - Keeping discipline in the home?
   - Working with the teachers?
   - Motivating your child?
   - Dealing with your child's problems?
25. Would you be interested in meeting with other parents to discuss problems and set goals to help the school and your family?
26. If "Yes", please check where you would like these meetings to be held.
   - School
   - Recreation center
   - Church
   - In a home
27. Would you be willing to host a parent meeting in your home?
28. Do you have children attending other DISD schools?
29. If "YES", list the schools:
30. Do you have other children attending Colonial?
31. If "Yes", list their names and grades

Please fill out the information on the back of this sheet.
APPENDIX C
Personal Index Journal

September 11, 1991 :

Proposal accepted: P.I.J. initiated

Tiffany reports that both hardware and software are supposed to be delivered at any time. I offer to call her periodically to find out when the materials will arrive in order to be present when hardware and software are installed.

September 12, 1991 :

The three administrators who initiated the development of the grant at Colonial Learning Center have all been transferred to other duties! They are the ones who would have been responsible for the conducting of the research and the day to day operations of the experiment. New people with no prior knowledge of or participation in the grant have been appointed as principal, dean of students, and computer specialist.

September 16, 1991 :

Tiffany says that the hardware and software have not arrived yet.

September 20, 1991 :

Tiffany says that the hardware and software have not arrived yet

September 24, 1991 :

Tiffany says that the hardware and software have not arrived yet

September 26, 1991 :

Tiffany reports that there are to be further delays in the shipment of the software because some specifications were not included in the original bid.
September 28, 1991:

Called Pam and she is somewhat anxious about the project because no one has told her a thing about the grant and her part in it. She states that most of the teachers are finding out about the program and that they are involved in a somewhat haphazard fashion. She reports that some teachers are upset about not being told of the project or their part in it before hearing about it by the grapevine.

September 29, 1991:

Tiffany reports no progress.

September 30, 1991:

Called Tiffany...no progress. Time is getting short to start in October as planned. Also, let her know of Pam's reservations and she agreed to spend some time with Pam next week to alleviate her fears.

October 4, 1991:

Called Pam...Tiffany did not show up to work with Pam to help her with her duties (Pam is replacing Tiffany as computer specialist at the center). Called Tiffany and she reports that all equipment should be in by next week. Told her I would call her then.

October 5, 1991:

Spoke with the community liaison and asked for his help with the student and parent surveys. He seemed slightly hesitant as if he might not want to do it. He said he wanted me to accompany him on his rounds at least one day so I would know the community in which the children at the school live. I agreed.

October 7, 1991:

Talked with my principal and decided to take two days personal leave immediately before state fair day for my district. This way I can spend three days in the field, with the liaison.
October 9, 1991:

First day of survey. Del apologized and informed me that he had to do hall duty for the duration of the TAAS test. I went home and worked on other things.

October 11, 1991:

First day of survey:

9:00 A.M. - Met with family of new student. They had no transportation back to the homeless shelter so Del offered them a ride. He took them first to St. Luke's to enroll in the adopt-a-family program (clothing for the family plus presents for the children at Christmas time). Then we took them to the Dallas Life Foundation Shelter for the Homeless.

10:00 - Began visitation on Pennsylvania Avenue. Virtually every address was incorrect.

12:00 - Picked up neighborhood woman walking home in the heat of the day with two large grocery sacks and took her home. Del asked her to consider the new English classes starting at the center soon (she was Hispanic and spoke very little English). He reminded her of the amnesty program and told her that anyone with a green card could participate.

1:00 P.M. - Resumed visitations...Gould street had eight residences listed as having children living there. Very few were correct. One apartment house was without windows, doors, power, and water, but still had people living there. Moved on to the next street, with much better success. This part of the neighborhood is a much better area. Still, we are met with stares and suspicion until we explain that we are from the learning center. This seems to break the ice as everyone, it seems, likes the learning centers.

October 13, 1991:

Tiffany called to say that some of the equipment had arrived. Unfortunately, there are some of compatibility problems which result in a call to the manufacturer. Some extra cards will have to be ordered to alleviate the compatibility problem. More time and now there is no way the project is going to start on time.
October 14, 1991:

4:00 P.M. - Arrive at Colonial. Set up table for Del, the school nurse, and myself. Today is report card/meet the teacher day. Each parent comes to visit with their child's teacher for a conference. There is food and entertainment in the cafeteria. Passed out 250 parent survey forms. Most promised to return the forms the next day. The school nurse informed me that she had been at the center for many years and she was always trying to think of new ways of getting the parents to update their addresses. She stated that their high mobility rate was one of the main reasons, but that parents often did not want anybody to know where they lived and were wary of giving out information.

October 16, 1991:

Del called me. He said he was putting another letter out to parents to explain the survey. However, he expressed a great deal of concern about being able to find everyone in the neighborhood. His reasons are these:

1) The addresses, as we already knew, were out of date.
2) His experience was that the community does not want outsiders to know where they live.
3) He is concerned that many parents simply cannot read the surveys and so they do not return them.
4) He has some concern for his personal safety because he has to go out alone.

Del suggests sending out another survey with a flyer attached to it advertising a free pizza party for the winners. I agree.

October 21, 1991:

Fifteen of the surveys were returned from the meet the teacher night. Decided to go through the students, as Dell suggested, instead of their parents. Made flyer in the evening and attached to some more photocopies of the survey. The class with the highest percentage of returns would get a pizza party.

October 22, 1991:

Delivered the new surveys to Dell. Also, asked for: new addresses, list of teachers in the experiment, list of students by classroom. Left a stamped, self-addressed envelope with more than enough postage.
October 24, 1991:

Spoke to Tiffany. She indicated that if the company did not deliver the rest of the hardware by Nov. 1, they would lose the contract.

November 3, 1991:

Spoke to Tiffany. All hardware was delivered in time. However, there is another problem. Because some of the hardware is from other manufacturers, IBM does not want to install the network. They feel that the items manufactured by another bidder may not work properly and IBM does not want to guarantee its equipment in this case. Tiffany will get back to me ASAP.

November 7, 1991:

Called Mrs. Tollette at Carver Learning center. I will take the student attitude measures to the school on Friday. She said she would administer the instrument next week. Arranged for a sub so I could go to learning center to pick everything up they agreed to send to me in my envelope. Contest was over and the fifth grade class of Mrs. Carnes won the pizza party. Mrs. Carnes class in the largest class in the school.

November 8, 1991:

Delivered surveys to Carver and Colonial.

November 14, 1991:

Picked up surveys.

November 17, 1991:

Called Tiffany... still negotiating in regard to the installation. She also informed me at this time that part of the software had not been delivered either. She promises to call me the minute anything arrives or is to be installed in order for me to be there to witness the installation.

December 11, 1991:

No word...decided to wait until after Christmas to call. I have been assured that I will be informed when the materials arrive.
January 10, 1992:

Tiffany calls me to say that the hardware was installed last week. She forgot to call me. Still no CTB software.

January 7, 1992:

Receive letter from Mrs. Calhoun re: meeting date for the grant committee. Called Pam -- she informed me that Del just found out he was a part of the grant and was required to participate in the surveys. Now I know why he was reluctant to help at first.

January 24, 1992:

In our grant meeting, Mrs. Calhoun explains that the plan has been altered to reflect the fact that the hardware and software were so long in arriving. The changes that have been made do not reflect what was written into the original grant. More to the point, the new language makes the dissertation proposal impossible to carry out. Spoke to major professor after the meeting. We went back in and asked again about the new wording. Left it in the hands of the boss (Dr. P.). Chaffie James.

January 25, 1992:

Met with Pam to get handle on program. Discussed scheduling, requirements for project, support from faculty and administration. Since Pam was the key figure in implementation, tried to get her feedback and agreement to the degree of support she was willing to give. Pam very helpful and seemed willing.

January 29, 1992:

First class meeting. As part of the original grant, the university was to provide college credit to those teachers participating in the experiment. The course began on this day with the usual introductions of the participants. Dr. P. also addressed concerns regarding the new wording of the experiment in a very diplomatic fashion, to allow for some changes later to bring things in line more with the original document on which the research proposals were based.
February 5, 1992:

Class meeting to discuss CTB and use of Skills Bank. Practice with Skills Bank. CTB not running.

February 8, 1992:

All day Saturday. Use of Skills Bank. Found out CTB not networkable and could not integrate with Skills Bank. Part not ordered, no manual.

February 17, 1992:

Students start project.

February 19, 1992:

Still no CTB. Dr. P. re-designed the experiment to fit the original intent of the grant. Parent component fleshed out. Dr. P. asked me to write a synopsis of the new parent component with a calendar of events. I agreed to deliver the paper the next morning to the learning center. Called Del when I got home and asked him if I could bring him the synopsis to him before he left for school the next morning. He agreed.

February 20, 1992:

Delivered synopsis to Dell. Parent Flyer to be designed and distributed. Was not done. Evening PTA meeting -- orientation, introduction to computer study and understanding student scoring -- diagnostic reports.

February 21, 1992:

Lock-in for everyone -- Parent and student involvement -- 7:00 P.M. to midnight. Orientation, intro to program, understanding reports on student scoring. Computer lab activities -- introduction to computing, student demonstrations, parent participation. Done by Pam.

February 27, 1992:

Student program on Oratorical presentations, orientation to project, parent-child training on computers. (reported not done)
March 2, 1992:

Parent-teacher session on parent computer workshop. (reported not done)

March 3, 1992:

Parent-student computer workshop not done. (reported not done)

March 4, 1992:

Parent-student computer workshop. (reported not done)

March 5, 1992:

Faxed list of parent pre-test to Pam so she could administer pre-test to those who did not take the test earlier.

March 23, 24, 25, 1992:

Parent training not done. Out of the six days in March allocated to parent training, none done. Only one day - Feb 21 - did anything happen.

April 7, 1992:

NAPT administered.

April 15, 1992:

Class meeting...status report...course requirements for teachers who were participating in the NECC Conference. Students regularly on skills bank now.

April 20, 1992:

Student Climate Post Surveys Forms taken to Carver.

April 21, 22, 23, 1992:

Parent training sessions re-scheduled. Training sessions were successful.
April 24, 1992:

Student Climate Post Surveys Forms taken to Colonial.

May 6, 1992:

Parent surveys issued. Student surveys collected.

May 7, 1992:

Received raw scores for ITBS.

May 13, 1992:

Parent surveys collected.

May 16, 1992:

Discovered entire 6th grade survey forms not returned by Carver.

May 18, 1992:

Took second set of 6th grade forms to Carver.

May 20, 1992:

Received word that NAPT scores delayed 30 days. May 20 class meeting re-scheduled to June 15 at NECC.

May 21, 1992:

Rocky picked up Carver Sixth grade surveys. Had to sit and wait for them to be done.

July 3, 1992:

Received NAPT raw scores.
REFERENCES


Scott, R., & Davis, A. (1979, November). Preschool education and bussing: Do we have our priorities straight?. Paper presented at the National Urban Education Association Conference, Detroit, MI.


