DEVELOPMENT AND EFFECTIVENESS OF THE

SOUTHEAST KANSAS WRITING TO READ

CONSORTIUM

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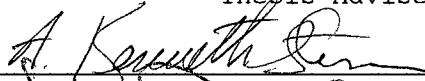Pittsburg State University
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1983

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fufillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
July, 1995

DEVELOPMENT AND EFFECTIVENESS OF THE

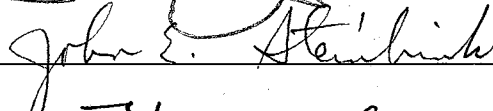SOUTHEAST KANSAS WRITING TO READ

CONSORTIUM

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ACKNOWLEDGMENTS

I wish to express my sincere appreciation to my advisor and mentor, Dr. Gerald Bass, for his patience, guidance, encouragement, and most of all his empathic understanding of what being a Superintendent of School and completing a doctoral program concurrently really means.

I would like to thank my committee members, Dr. Ken Stern, Dr. Deke Johnson, and Dr. John Stienbrink, for their time and suggestions during the dissertation process.

To Mr. John Archer, friend and adviser, a special thank you for the opportunities you have provided me for personal and professional growth.

With special appreciation to my family, both present and departed, who influenced and molded me into the person I am.

Most importantly to my wife, Debbie, and my two daughters, Kelli and Kerri. Words cannot adequately express my love for you. From the bottom of my heart, thank you for your patience and support through this journey and the sacrifices you have all made and endured on my behalf.

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CHAPTER I

INTRODUCTION

During the 1993-94 school year, a group of superintendents from school districts in the southeast region of Kansas began discussions of possible means by which they could establish more effective programs, particularly in the areas of reading and writing. A proposal was eventually submitted to the William L. Abernathy Charitable Trust in the amount of $415,000.00 on behalf of 10 of those school districts and the Southeast Kansas Education Service Center, with the common goal of providing first grade students from economically depressed areas of southeast Kansas with the opportunity for increased learning through innovative educational technology. The proposal was based on the successful implementation of the International Business Machines (IBM) Writing To Read (WTR) program in first grade classrooms in Galena Unified School District No. 499, Galena, Kansas.

Upon approval of the grant, the Southeast Kansas Writing To Read Consortium was established. The purpose was to provide first grade students in these 10 school districts with enhanced learning opportunities. Special emphasis was placed on the development of a positive and motivating educational environment that would allow elementary students, many of whom were considered to be at risk of school failure, to achieve mastery over identified writing and

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reading outcomes. The development of essential skills such as problem solving, cooperation, and creative thinking was also anticipated. The WTR program was designed for the delivery of individualized, interactive, and computer-enhanced instruction that is specifically designed to increase student success (Martin & Friedberg, 1986).

The WTR program was selected as a means to enhance the ability of teachers to provide individualized instruction for elementary students through innovative multimedia technology. WTR builds upon the natural language base children have upon entering school. Through the use of an interactive, computer-enhanced instructional program, students are taught to write what they can say and then to read what they have written (Martin & Friedberg, 1986). Such computer-assisted instruction, through an integrated network, provides for instruction to be individualized so that children can work at their own pace. WTR instruction is delivered in a laboratory setting using a multi-activity, multi-sensory approach to learning.

The Southeast Kansas WTR Consortium was administered and organized through the Southeast Kansas Education Service Center-Greenbush. The Southeast Kansas Education Service Center is an intermediate educational unit formed and officially recognized by the Kansas State Department of Education in 1976, with the mission to provide equal educational opportunities for all students. Under Kansas statutes, the Education Service Center is defined as an "interlocal," a designation which gives the organization all of the

rights, privileges, and duties of a unified school district, with
the exception of the power to levy taxes.

Statement of the Problem

Many of the students attending public schools are at-risk of
not completing high school. Among the reasons are factors associated
with poverty, drug and/or alcohol abuse, family problems, peer
pressure, lack of basic skills, and boredom. Implementation of
innovative programs by school districts which could address these
factors is difficult. Barriers could include traditions, lack of
understanding by staff and community of the problems and possible
solutions, and lack of financial and human resources.
Superintendents can provide the needed leadership to overcome these
obstacles and provide opportunities for the adoption and
implementation of innovative programs. WTR is an example of an
innovative program which can become the vehicle for improving at-
risk students' basic skills. Boredom can be reduced through an
interactive computer-enhanced approach to learning.

The purpose of this study was to examine the development and
implementation of one such educational program in order to identify
the manner in which it was conceived and implemented; to determine
its effectiveness and to identify lessons for educators seeking to
also establish innovative programs in their schools. Specifically,
the study was focused on the development of the Southeast Kansas WTR
Consortium, a cooperative venture of 10 school districts. Data from
these school districts were collected and analyzed to determine

if the new program had been effective in providing writing and reading instruction to first grade students in those districts.

The following research questions were established to guide this study:

(1) How was the Southeast Kansas WTR Consortium developed? What roles were played by superintendents in its development and implementation?

(2) How do the superintendents of the participating school districts view the effectiveness of the WTR program and of the consortium delivery model used in the Southeast Kansas WTR Consortium?

(3) Has the WTR program provided more effective instruction in writing and reading skills than programs traditionally provided in schools?

(4) Do teachers and students perceive that participation in the Southeast Kansas WTR Consortium has improved reading and writing skills of first grade students?

(5) Are the students and teachers who participated in WTR satisfied with the program?

Significance

The results of this study of the Southeast Kansas WTR Consortium may show the effect on students of an individualized, interactive, and computer-enhanced program of instruction, in part in comparison to more traditional programs. Such evidence regarding program comparisons may be of value to other educators as they

consider changing instructional designs within their own schools.

An assessment of the consortium model may also be of benefit to educators as they consider various means by which they can implement often expensive, technologically supported educational programs. School administrators may also acquire new knowledge of the practices by which they can best assist in the implementation of innovative programs.

Limitations

Limitations associated with this study include the following:

(1) The study was limited to only one innovative program in one small region in one state.

(2) The innovative nature of the WTR program, the introduction of technology, and the special attention on students, teachers, administrators, and researchers are factors which could have produced a Hawthorne Effect.

(3) This researcher was a superintendent whose district had previously adopted WTR. As leader of a school district within the Greenbush Service Center region he advised superintendents associated with the development of the consortium. While that role has provided a full understanding of what took place, it also may affected a judgment regarding the positive aspects of the program due to a sense of "ownership," much as that same feeling may have affected the observations of the others connected with the project.

(4) The researcher involved in the evaluation phase of the grant accepted by the Consortium went beyond the original scope of

that work and produced data analyses which had originally been intended to be done for this study, thus limiting the analysis that could be done uniquely for this project.

Summary

Due to the financial support of the William L. Abernathy Charitable Trust, the WTR program was selected as an innovative approach to improving reading and writing skills of first grade students in southeast Kansas. A consortium delivery model was chosen as the most effective method of implementation and support for the WTR program in 10 school districts. An assessment of the consortium delivery model may provide insight as educators consider various means by which they can implement technologically supported programs to assist at-risk youth.

Results of the study of the Southeast Kansas Educational WTR Consortium are reported in the following chapters. Chapter II not only contains a review of literature on the WTR program but also the data obtained from empirical research on the WTR consortium conducted under the supervision of Dr. Robert Harrington, a professor from the University of Kansas. The study's research design is found in Chapter III and Chapter IV is used to report the results from a two-year comparison of student and teacher satisfaction with WTR as well as of a Superintendent Satisfaction Survey. Chapter V includes a summary of the study plus the conclusions and recommendations and a commentary by the researcher.

CHAPTER II

REVIEW OF LITERATURE

This chapter contains a summary of material obtained through a
review of pertinent literature. The contents of the chapter are
organized in three sections. The first section contains a brief
description of the Writing To Read (WTR) program. In the second
portion of the chapter, a review of studies of WTR is summarized.
Finally, the concluding segment of the first-year southeast Kansas
WTR Consortium.

Description of the Writing To Read Program

In WTR, students learn the "Alphabetic Principle" through a
phonemic spelling system which allows them to write anything they
can say. The Alphabetic Principle is the "practice of combining the
26 letters of the alphabet in various ways to write every word in
the English language" (Martin & Friedberg, 1986). Technology used in
the WTR program assists students in applying the Alphabetic
Principle by writing words, sentences, and stories.

>   The WTR system provides an uncluttered, consistent
>   phonemic spelling system for the student to use. The
>   42 phonemes, consisting of letter-sound combinations,
>   help students realize that speech sounds can also be
>   written. By using the phonemic alphabet system
>   instead of the English spelling system, students can
>   learn to write at a much earlier stage, The English
>   spelling system, with its inconsistencies and complex
>   rules, is confusing for students. Premature insistence
>   that students use standard or correct spelling inhibits

their desires and abilities to write. as students come
to understand how a consistent spelling system works,
they begin to make the transition to understand spelling
(Martin & Friedberg, 1986, p. 14).

Martin and Friedberg (1986) based the development of the WTR system

on a series of observations he had made during the course of his

career as a professional educator. These observations were that

A) Children come to school as able, verbal communicators.
   Most children enter school with a speaking vocabulary of
   more than 2,000 words.
B) Children learn better when they can express themselves
   in their own language.
C) Children from a variety of backgrounds and
   socioeconomic levels can learn to write and read when
   their own language and culture is accepted.
D) Children can use their existing language skills as
   they learn to write English sounds.
E) Children learn better if the material is organized
   to invite them to think - to find logical order in
   their growing understanding.
F) Children can learn to apply the Alphabetic Principle
   through the use of a Phonemic Spelling System - to
   write and read their own words, sentences, and stories.
G) Children make a transition from phonemic spelling to
   standard 'book' spelling.
H) Children learn better when many of their senses
   are involved.
I) Children learn better in a responsive, risk-free,
   structured environment where they manage their own
   learning activities.
J) Children learn better at the computer when they work
   in pairs and help one another.
K) Children learn better when they produce their own
   hard copy as evidence of learning.
L) Children learn more successfully when the program
   is fitted to the way they learn, rather than when
   children are fitted to the program.
M) Children's learning is maximized when they are able
   to interact with the computer in a dynamic, responsive
   way.
N) Children learn more effectively when parents are
   involved as reinforcers of the learning process
   (Martin & Friedberg, 1986, pp. 110-111).

The WTR laboratory consists of five interrelated learning

stations designed to provide a structural learning environment and

opportunities for young learners to experience success with writing and reading (Martin & Friedberg, 1986). The learning stations consist of a computer station where the phonemes are introduced; a work journal station to reinforce the new phonemes and to provide usage experience; a writing/typing station to provide additional practice in the application of the phonemic principles through free expression; a make words station where the students apply the phonemic concepts through multi-sensory experiences; and a listening library station to facilitate word recognition and the transition to reading books. By the end of the WTR program, students will have completed 10 instructional cycles, each built on three common words that illustrate the 42 phonemes.

At the computer station, students work in pairs on each of the 10 programs, or Instructional Cycles. The purpose of this station is to introduce the students to the concept of letter/sound relationships. Each of the 10 cycles introduces three words and the phonemes associated with the sounds of the words. The students follow the same format through each of the 10 cycles. First, a computer voice directs students and pronounces the cycle word and its sounds. Students then repeat the word and the sound. Pictures, words, and letters then appear on the computer screen in sequence. Students take turns typing the word on the computer, they chant the sounds with the computer voice, they clap their hands as they sound the sounds, and stamp their feet as they say the sounds. Each lesson is concluded by the students typing the word.

The computer station is unique in the way in which it encourages students. When a student responds correctly, a soft "beep" emits from the computer. If the student enters a wrong answer, the computer makes no response. A student's incorrect response is not displayed on the computer screen. Instead, the computer simply repeats the directions or the program automatically provides a visual clue to the correct response. If, after a predetermined period of time, the student has made no response, the computer program will repeat the directions. This allows a user friendly relationship to develop between the student and the computer.

The work journal station reinforces the computer station and provides additional practice for the students. Here, the students write the words they hear and say. The work journals provide the student with additional letter-sound reinforcement, application of phonemes to new words, freedom to express their thoughts on a "write words page," and a review of the cycle words. Student record-keeping and parental involvement activities are also a part of the work journal station.

The writing/typing station is where students may use a variety of materials to express their writing. At this station, students continue to practice phonemes and cycle words; recombine sound/symbol phonemes to make new words; copy the words, sentences, and stories they have composed; and type or write final drafts of edited stories.

The make words station is probably the most popular station because of the use of various materials from which to make letters and words. The purpose of this station is to assist students as they learn the Alphabetic Principle. Here students begin to visually see the connection between letters and the sounds of speech they represent. Activities at this station assist students in discovering that letters or sound symbols of the cycle words can be combined to make new words.

The listening library station matches spoken words with written words. Students listen to a story recorded on an audio cassette while they follow along in the book being read. The listening library helps students recognize that speech can be represented by printed words; realize that text and pictures communicate ideas; understand that, like speech, printed words follow each other in a continuous pattern and have meaning when combined; see that printed language progresses from left to right; begin the transition from phonemic spelling to standard spelling; learn, by example, the conventions of writing (capitalization and punctuation); increase sight and spoken vocabularies; and realize that listening and reading are fun (Martin & Friedberg, 1986).

Studies of Writing To Read

Since the introduction of the IBM sponsored WTR program in 1982, an array of research studies has been conducted. Many of these were criticized as containing inherent weaknesses (Freyd & Lytle, 1990). Another problem with evaluating WTR is that only a

limited amount of the research has been published (Freyd & Lytle, 1990). There is a great deal of evidence that suggests that the WTR program provides a positive influence in the areas of writing and reading (Adkins, 1989), be it of short-term or long-term student benefit.

> The Educational Testing Service was commissioned by IBM at the beginning of the National Demonstration Project to provide an evaluation of the effectiveness of the program. Their overall conclusion was that WTR is a powerful and effective educational program (Adkins, 1989, p. 5).

Conversely the argument has been made that there are a great many variables that should be considered as having influenced the apparent student progress in the above mentioned areas and that improvement cannot be solely based on the WTR program. In a presentation before the National Association of School Psychologists, Harrington (1995) identified additional problems associated with the studies of WTR programs.

> While many of the reviewers of the Writing to Read Program have identified the need for longitudinal studies and more rigorous experimental designs examining the instructional effectiveness of the program, the majority of the current research has tended to study short-term applications and outcomes and has failed to include valid comparison groups. Another problem with many of the evaluations of the Writing to Read Program is that the Writing to Read Program is typically introduced as a supplement to traditional language arts instruction rather than an independent program. Under these conditions students in Writing to Read may receive a double dose of language arts instruction. They get whatever the students in the control group get and, in addition, they spend one hour per day in a Writing to Read lab. This increase in time on task may very well result in enhanced performance for the Writing to Read students, not because the program is more effective than the alternatives, but because of the increased instructional time. Another confounding factor that makes the findings confusing is that often one or more

adults will be present in the Writing to Read lab while
these same aides may not be present in the control groups.
Positive results might be expected under these more
favorable conditions. Furthermore, few researchers
have made efforts to control for the Hawthorne Effect
or the positive influence that any novel teaching
approach might have on the teachers and students.
After all, students get to work on computers in a new
and expensive environment which is very visible to other
students, teachers, administrators, and parents. Add to
this mix, frequent visits from University faculty,
visiting teachers and administrators, and the implicit
message to teachers and students involved in the Writing
to Read program is that something new and exciting in
going on now (p. 8).

In another study, Freyd & Lytle (1990) stated that, "IBM's WTR

program represents the largest direct corporate intervention in

basic skills instruction currently implemented in this country"

(p. 83). They went on to say,

we have been able to gather 17 studies dealing with
the implementation, acceptance, and benefits of WTR.
Regrettably, all of these studies have inherent
weaknesses that limit their utility. No study has
found long-term benefits to participating students
(p. 85).

Among those identified weaknesses were the following:

A) Six of the 17 studies were conducted in single
   schools.
B) All of the studies done in more than one school were
   located in urban districts.
C) In 15 of the 17 studies , the program length ranged
   from three to nine months ; two followed a part of
   their study population for a second year.
D) None of the studies uses a true experimental design.
E) Only seven of the 17 studies made any attempt to
   equate experimental and control groups, either by
   matching class groups on socioeconomic status (SES)
   and/or prior achievement or by adjusting outcome
   scores to reflect pretest scores (pp. 85-86).

Fried & Lytle wrote that the single major weakness in

interpreting results of WTR studies is the failure to acknowledge

that, when they are engaged in writing, students are receiving

language instruction which is different from the usual instruction
most kindergarten and first graders receive. They also identified
as a weakness the lack of independent research material. Without
solid research on the effectiveness of WTR "few people have reason
to question the claim of success that IBM presents in its printed
material. The very fact that they're dealing with one of the most
prestigious companies in the world apparently diminishes the risk of
the investment" (p. 87).

Levinson and Lalor (1989) conducted a study that summarizes the
outcomes of a two-year (1986-1988) investigation of WTR. The study
design was, in part, a replication of a study conducted by the
Educational Testing Service in 1984. The data suggested that WTR
had a strong impact in the writing abilities of children in
kindergarten and first grade as measured by the California
Achievement Test. This was the case even after only 14 weeks in the
program. Fifty-three percent of the children in WTR obtained scores
of excellent or good while 12 percent of the children in control
schools obtained similar scores. These differences were
statistically significant and indicated that kindergarten children
in the WTR program write better than children in the comparison
group. Based on these data, it was concluded that students in WTR
scored higher on the California Achievement Test than did those
students in the control group. Additional findings of Levinson and
Lalor (1989) included the following:

A) Writing sample scores of kindergarten children in the
WTR program were significantly better than children in
the comparison group.

B) First grade children in the WTR program tend to get
   higher scores on their writing samples than do
   children in the comparison group but are not
   significantly different.
C) Reading Vocabulary and Comprehension scores of WTR
   kindergarten children were significantly higher than
   those of the comparison group.
D) First grade children in the WTR program tend to score
   higher than the comparison group in reading but are
   not significantly different.
E) WTR first graders obtained higher spelling scores than
   comparison first graders.
F) Teachers respond positively to WTR. They feel that
   students read and write better than students in
   previous years.
G) Parents respond positively to WTR. A majority report
   that their child does better in reading and writing
   than their previous children.
H) There were no statistically significant differences in
   the distribution of writing scores between follow-up
   second grade experimental and control group students;
   however, when average writing scores were obtained,
   there was a significant difference favoring the
   experimental group
I) There was no significant difference in the average
   reading scores of follow-up second grade experimental
   and control group students (p. 12).

Levinson and Lalor (1989) concluded that WTR "does what it purports

to do and is an effective intervention for developing writing and

reading skills in kindergarten and writing skills in first grade.

The quality of the writing samples, in particular, seems to

corroborate the WTR rationale" (p. 13).

There are several studies that have shown the WTR program to be

a positive influence in the areas of writing and reading. Murphy &

Appel (1984), through the Educational Testing Service were

commissioned by IBM to provide an evaluation of the effectiveness of

the National Demonstration Project of WTR. More than 10,000

kindergarten and first grade students in 21 schools were observed.

In the second year, 3,120 students in WTR were compared to 2,379

non-WTR students. The conclusions of this study were that WTR is a powerful and effective educational program, kindergarten and first-grade students demonstrate the attainment of progressively complex writing skills with WTR, kindergarten WTR students gain a significant advantage in reading ability over non-WTR students, WTR students perform as well as non-WTR students in spelling, and teachers and parents of WTR students believe them to make greater progress in reading and writing than teachers and parents of non-WTR students.

In West Virginia, 31 kindergarten classrooms in five counties were involved in an evaluation study. Twenty-seven classrooms served as the control group (not receiving WTR instruction). Assessment was based on results of a spelling test and a writing test. In a county by county analysis, all treatment groups in each subject in each county scored higher than the control groups in the same county (Adkins, 1989).

Results from a study of full-day kindergarten students in Columbus, Ohio, indicated higher achievement by students in the WTR program. Language and reading achievement was measured by pre-test and post-test scores on the Metropolitan Achievement Test. Among the treatment groups, those using WTR in full-day kindergarten classes "consistently showed the greatest achievement in reading, language, and writing" (Brierly, 1987, p. 31).

WTR has proven to have a positive effect with special education students as well as regular education students. Personnel in the Special Education Department of the Albuquerque Public Schools

evaluated the effectiveness of WTR with special education students during the 1988-89 school year using the Metropolitan Achievement Test with a pre-test and post-test model. According to results of the study by Case and Christopher (1989). "Standardized reading tests showed that in eight weeks, kindergarten and primary special education students who utilized WTR progressed almost five times faster than did students in the comparison group" (p. 6). Students in the study made an average Normal Curve Equivalent (NCE) gain of 14.39 points from the pre-test to the post-test. For those students in the study, this represented a gain of 15 percent in NCE points in eight weeks. Case and Marty (1989), examining the same program found that "the WTR system proved to be an effective intervention strategy for students who had been referred for special education testing but who had not yet been tested or placed" (p. 11).

The Mississippi Evaluation of Writing To Read (Chambless, Chambless, & Moore, 1990) attempted to determine the effectiveness of WTR on first grade students. A two-group experimental design was used in the study wherein both the experimental and control groups were selected from the same school district. A total of 27 WTR and 27 control schools were selected from 21 Mississippi school districts. Two outcome measurements were employed in the study: portfolio measurements and achievement test scores on the Stanford Achievement Test. There were four major conclusions of the Chambless, Chambless, and Moore (1990) study.

A.   Seven of the WTR groups had a significantly more
positive attitude toward reading than the control groups.
B.   WTR first grade students write significantly better
than control first grade students receiving traditional
instruction. . .
C.   Six of the WTR first grade groups performed
significantly better than the control first grade groups
on reading achievement. . .
D.   Five of the WTR first grade groups performed
significantly better than the control groups on language
achievement. . .   Six of the WTR first grade groups
performed significantly better than the control groups in
spelling (pp. 2-5).

In summary, they found that:

First grade students who participated in the Mississippi
Writing To Read program during the 1989-90 school year
made greater gains in literacy skills (writing and
reading) than comparable first grade children who
received traditional instruction. The outcome measures
used in the evaluation project reflect that the use of
the Writing To Read program enhanced the development of
essential literacy skills for first graders regardless of
socioeconomic status, race, or sex (p. 5).

Decker (1991) examined the effectiveness of WTR in an

elementary language arts program with disadvantaged minority

students. First through fourth graders from predominantly black,

urban schools and from a rural, racially integrated school were

tested in vocabulary, reading recognition, reading comprehension,

and language subtests of the Metropolitan Achievement Test and in

the reading, language, and spelling subtests of the California

Achievement Test. Decker (1991) concluded that "WTR had proven

significant gains in language and spelling which hold up over time.

However the WTR program does not seem to influence reading ability"

(p. 8). In addition, WTR was found to be motivating to the students

as a result of the sense of control they felt over their learning

because of the computer.

Similar results were found by Gilman, Carnes, and Sommer (1988) in a study which consisted of 237 kindergarten students in Indiana. The study sought to determine whether WTR students performed significantly higher in writing and reading than students in traditional classrooms. "Writing To Read kindergarten students scored significantly higher in both reading and writing than students in the previous year's traditional classroom. WTR first graders in both reading and writing scored no differently than students in traditional classes" (p. 4).

Additional studies have been conducted that show the effectiveness of WTR. In Fort Myers, Florida 240 kindergartners and 326 first grade students were involved in a study. "Both kindergartners and first graders in WTR out-performed the comparison group. The biggest difference was at the kindergarten level" (Gilman et al., 1988, p. 8).

During the 1983-84 school year, 11 Rochester, Michigan, schools participated in a national WTR field test involving 850 first grade students. Writing samples were collected from the students and scored holistically with the scale ranging from two to eight. In the WTR group 57 percent of the students had scores of six, seven, or eight. In the non-WTR group only 35 percent of the students had scored in the top three scores (Gilman et al., 1988, p. 8).

The Instructional Support Evaluation Unit of the New York City Public Schools studied the effects of the WTR program conducted during the 1988-89 school year in 87 schools in 22 community school districts.

Overall reaction to the program was positive. Most participants found that the program provided a good foundation in basic skills for students, was an excellent tool for developing confident and mature writers, and believed the computers and center setting were significant motivational devices. The program is perceived as contributing significantly to the child's psychological and social development and fostering attitudes of initiative, experimentation, and persistence that are essential to learning (Guerrero, Shollar, & Cheung, 1990, p. 54).

Additional major findings of the Guerrero (1990) study follow:

A) WTR has little immediate impact, and no long-term impact on improving reading performance of participating students when compared with other reading programs.

B) Students in the program made significant progress in their writing. Pre- and post-test comparison of handwritten samples show gains that are both statistically significant and educationally meaningful.

C) In a comparison of handwritten samples, WTR students improved their writing skill to a greater degree than similar students not participating in the program. Data show that more than one quarter of all WTR students not participating in the program in writing sentences and producing coherent narratives.

D) Monolingual students at the kindergarten level show a statistically significant improvement over bilingual kindergartners participating in the program.

E) More students in the program produce higher levels of writing in their handwritten samples than in their computer work; however, the difference is not educationally meaningful (p. 55).

Success of WTR programs from across the nation was reported by Strayer (1989). When tested using the National Test of Basic Skills, Florida second grade students having had WTR performed better than their non-WTR peers. Second grade students who were WTR graduates had better performance on vocabulary, comprehension, and total reading achievement than non-WTR students. When tested on spelling, second grade students who had participated in WTR were able to spell as well as students who had not participated in WTR.

In language expression, WTR students scored significantly higher than non-WTR students. WTR students wrote significantly better than non-WTR students when their writing samples were compared. In one Florida school system, students who had WTR were placed at a consistently higher reading level at the beginning of first grade than students who had been enrolled in a regular kindergarten program. At the end of first grade, 72 percent of the WTR students were placed in level 10 of the basal series while only 45 percent of the non-WTR students had progressed to that level. When compared, low socioeconomic students having WTR were almost one level above their non-WTR peers. At the end of first grade, males in WTR placed more than one-half level above males who did not participate in WTR. For both males and females having had WTR, level placement was significantly higher than the level of placement for non-WTR students (Stayer, 1989).

In a mid-sized Pennsylvania school district WTR graduates were studied over a period of four years. Prior to WTR, kindergarten students tested with the Stanford Achievement Test scored at the 44th percentile. After WTR and at the end of the first grade, these same students scored at the 71st percentile. This gain was continued into the second grade where the students were scored at the 71st percentile. In the third grade, they scored at the 64th percentile, an average which was higher than any of the previous five years (Stayer, 1989).

First grade students in WTR in a Connecticut school district were compared with a control group not having WTR. Comparisons were made in writing and spelling. WTR students were shown to achieve greater growth in the area of writing than did the control group. When tested in October, before WTR, the number of students at the pre-writing level were about the same in both schools. In May, the number of WTR students advancing to the upper three levels of the writing scale was greater (73 percent) than the number of non-WTR students (47 percent). In the area of spelling, WTR students were shown to score significantly higher than non-WTR students (Stayer, 1989).

In a middle class, suburban New Jersey school, the Metropolitan Readiness Test was used as a pre- and post-test measure for kindergarten students. Results showed that the WTR students had significantly higher scores than the non-WTR students. The Woodcock Reading Mastery Test was used to measure achievement of kindergarten students in matched Texas schools which were part of a pilot WTR program in comparison with students in a regular academic program. WTR students were found to have achieved a statistically significant higher performance on the Word Comprehension subtest. WTR students, on the average, performed better on the Word Identification subtest and the Total Reading Score than did non-WTR students.

In the spring of 1988, as part of a formative evaluation study of WTR, a group of Ohio students who had participated in WTR during the 1986-87 school year and a group of students who had not participated in the program were compared on several measures.

These children were evaluated on reading achievement using the
Comprehensive Test of Basic Skills. An analysis of the second grade
results comparing the students who had WTR in the first grade versus
the students who had not had WTR showed that the differences between
the two groups when the cognitive skills index (ability) was held
constant, were statistically significant. The WTR group scored
higher on the Word Attack, Vocabulary, Reading Comprehension,
Spelling, Language Mechanics and Language Expression subtests
(Stayer, 1989). Kindergarten, pre-school, and first grade students
participating in a New York WTR program were also shown to have
achieved at higher levels in reading comprehension, language
expression, and independent composition skills.

A continued concern associated with the WTR program by its
critics is the use of inventive spelling by the students. The 42
phonemes on which the program is based use common spelling patterns.
According to Nelms (1990), the use of invented spelling is not
uncommon for many children. By placing the emphasis on what the
student writes as opposed to correct spelling, students are better
able to express themselves. The creativity of students is not
stifled by the confines of correct spelling. Students are able to
express themselves in a way not available to them without WTR. Nelms
(1990) went on to state that "the fact that the heart of WTR is
children's personal writing makes the program an excellent
complement to a whole-language philosophy" (p. 90), a view shared by
Odell (1992), who also wrote that, "although somewhat
unconventional in approach, WTR does get results. In a risk-free

environment, children are taught to write what they say and read

what they can write" (p. 32).

Dr. John Henry Martin (1986), creator of WTR, believed that the

phonemic spelling of WTR is a natural step in learning standard

spelling.

> Phonemic spelling must be a first phase writing tool
> because spelling rules and exceptions for the English
> language are complicated and confusing. The list of
> exceptions seems never ending. There are 26 letters in the
> alphabet and only 42 phonemes are needed to speak all the
> words in English. There are, however, over 500 different
> spelling combinations of these 42 sounds. The WTR phonemic
> spelling system provides an alternative to these
> inconsistencies. This spelling system allows children to
> begin writing in a simplified, uncluttered manner that
> they can understand. When children reach a level of
> writing proficiency that allows them to use their rich
> oral vocabulary to clearly express their thoughts, they
> are ready to focus on a transition to standard 'book'
> spelling. It's a common sense matter of first things
> first. Early insistence on spelling only stifles
> children's writing efforts (pp. 1-7).

The WTR approach to improving language arts skills seems to be

congruent with the whole language philosophy, according to Shaver

and Wise (1990);

> Rather than teaching the various aspects of communication
> as separate entities, whole language focuses on the
> integration of the communication skills of listening,
> speaking, writing, and reading. The computer can be a
> valuable tool for helping to immerse children in an
> environment in which print is filled with meaning. Whole
> language advocates believe that children learn to read by
> reading and by being read to, and that they learn to write
> by writing (p. 6).

In 1990, the State of Louisiana funded WTR program in 49

schools. Over 7000 kindergarten and first grade students

participated. Evaluation of the results by Shaver and Wise (1990)

showed findings similar to those found nationally: increased gain

scores on word recognition and vocabulary, improved writing samples, increased ability to remain on task, greater student self-confidence, fewer retentions, and enthusiastic support from teachers and parents.

In 1990, a study was conducted in the Fulton County, Georgia, schools to determine the effectiveness of WTR and the costs associated with the program (Singh, 1990). Scores of 257 kindergarten students on the California Achievement Test were used to determine if the WTR program was more effective than the traditional kindergarten program of instruction. Writing samples from 272 first grade students and their scores on the Georgia Criterion-Referenced Test in Reading and the Otis Lennon School Ability Test were used to determine if similar or better results can be obtained by programs which do not use computers to teach reading and writing. Scores of 163 second grade students on the Spelling subtest of the Iowa Tests of Basic Skills and the verbal subtest of the Cognitive Abilities Test indicated what effect WTR had on spelling ability. The results of the study were:

1) all teachers liked the WTR program;
2) there were considerable positive effects in the areas of visual and sound recognition and no negative effects on student abilities to spell at a later date;
3) there were nearly zero effects for kindergartners in the area of reading; and
4) there were no differences in the writing samples of the groups studied (Singh, 1990, p. 10).

Based on these studies, WTR seems to be most effective at the kindergarten level. Slavin (1990) reported that he believed to be the reason for this effect: "the problem is that traditional kindergartens with which WTR is compared are often nonacademic

programs that do not teach reading" (p. 215).

The Center for Research on Effective Schooling for

Disadvantaged Students, in Report No. 26 in 1991, cautioned against

unquestionable support for WTR.

> Despite the popularity of the program, research on WTR
> does not unambiguously support its effectiveness (Freyd &
> Lytle, 1990); (Krendl & Williams, 1990); (Slavin, 1990);
> (Slavin, Karweit, & Wasik, 1991). Students in WTR are
> routinely found to perform better than those in control
> classes on writing measures (Murphy & Appel, 1984), but
> this has little meaning because writing has rarely been
> taught at all in control groups. Small effects on
> reading performance are typically seen in kindergarten
> studies. However, the traditional kindergarten used as
> control groups were not teaching reading. One indirect
> indication of this is that across 13 studies, the median
> effect size for first grade implementations of WTR is .00
> (Slavin, 1991). Two-year implementations of the program
> in kindergarten and first grade have also found no
> positive effects (Sierra & Naron, 1988); (Levinson &
> Lalor, 1989), 1989), and follow-up studies of first grade
> implementations have found few differences in second
> grade achievement (Slavin et al., 1991, pp. 6-7).

A study was done in the Charlotte-Mechlenburg Public School in

Charlotte, North Carolina, during the 1990-91 school year. The

purpose of the study was to determine if different computer-assisted

programs for writing/language instruction affected different

achievement levels in writing for first and second grade students.

(Sockwell, 1992)

Two types of assessments were used for the study: teacher

ratings and Area Writing Instructor (AWI) ratings. Although neither

source consistently showed statistically significant differences in

achievement based on the program, the two assessment ratings painted

different pictures of how well students wrote at the end of the

school year on their final writing sample. Teacher assessments focused on specific skills (primary traits); AWI assessment focused on the overall quality of writing (focused holistic view). When primary traits were the focus of first grade teachers, most students came close to meeting teacher expectations "most of the time" by the end of the year. However, when the same papers were judged by AWIs students' achievement did not appear as high. AWIs rated most first grade students "below" the mid-point for achievement by the end of the year on the equal interval scale. That students' overall ability to write was judged differently on two different but popular assessment methods may demonstrate that judgments can be influenced by the selected method of assessment as well as by students' actual writing abilities. Results indicated that neither type of assessment consistently showed statistically significant differences in achievement based on program.

In a study of 569 kindergarten and first grade students Spillman, Hutchcraft, Olliff, Lutz, and Kray (1986) evaluated writing samples using communication units as the criteria. The experimental group used WTR and the control group received traditional instruction. Findings of the study indicated that children in the experimental group produced writing samples with twice as many communication units as the control group. The researcher concluded that "early, structured experiences with a computerized program, balanced with opportunities to talk, group write, and read increase the production of written language in children" (Spillman et al., 1986, p. 3).

Several studies concerning WTR have made mention of the
program's success in the special needs areas in education. As noted
below it has been found that WTR is successful in remedial reading
with older students as well as being an effective intervention
strategy for students referred for special testing, but not yet
placed. It has been found that the WTR program is an effective
instructional system and intervention strategy for kindergarten
students.

According to Slavin and others (1991), all interventions

    begin with the same rationale; start students off with
    success, and they will build on this success throughout
    their school careers. Much of the interest in
    early intervention focuses on disadvantaged students, who
    are felt to be more likely to start falling behind in
    basic skills in the early grades and then never catch up.
    Almost all children, regardless of social class or other
    factors, enter first grade full of enthusiasm, motivation,
    and self-confidence, fully expecting to succeed in school.
    By the end of first grade, many of these students have
    initial expectations that are not coming true, and have
    begun to see school as punishing and demeaning. Trying to
    remediate reading failure later on is very difficult --by
    then students who have failed are likely to be
    unmotivated, to have poor self-concepts as learners, to be
    anxious about reading, and to even hate reading. Reform is
    needed at all levels of education, but no goal of reform
    is as important as seeing that all children start off
    their school careers with success, confidence and a firm
    foundation in reading. Success in the early grades does
    not guarantee success throughout the school year and
    beyond, but failure in the early grades does virtually
    guarantee failure in later schooling (p. 7).

Wallace (1985, p. 22) stated that some educators found "WTR to be an
excellent remedial program for students who had difficulty with
phonics."

It has been noted that, although various studies of the WTR
program have shown both positive and negative results, other

variables may have had some effect on the outcomes found by the many

researchers involved in gathering the data. For example, Martin and

Friedberg (1986) reported that students enter schools as primary

verbal communicators with a speaking vocabulary of more than 2,000

words. This amount can vary greatly between students depending on

the background from which the student came. Martin (1986) went on

to state that

> students learn better and retain more when a multi-sensory
> approach is used in the learning process. Students have
> more success when the program is designed around the way
> they learn. Students also learn better when they are
> reinforced in a variety of ways by peers, teachers, and
> parents (p. 3).

Spillman and others (1986) reported that

> self-motivation has always been recognized as a primary
> impetus for achievement; writing and immediate reading of
> vital content, that which is totally matched to a child's
> intellectual and emotional levels, are maximum sources for
> self-motivation. Self-correction, both in oral editing and
> written revision, also appears to play significant roles
> in increased ability in reading and writing (p. 267).

Researchers at California State University, Long Beach,

conducted a review of WTR in 1990 in six school districts in

California. The goal was to demonstrate the use of a WTR adaptation

that supports a literature-based, whole language, writing process

environment in kindergarten and first grade classrooms. A

qualitative evaluation plan was developed which included classroom

observations, pre- and post-reading attitude surveys, year-long

portfolios of writing samples, teacher questionnaires, parent

questionnaires, administrator interviews and questionnaires, student

interviews, and teacher and administrator journals. Conclusions from

the study were as follow. First, 1) the most successful results

occurred in school sites where the integration of technology in the classroom originated with the classroom teachers and the site administrator shared their interest and desire to participate in the program. The elements of teacher and administrator expectation, enthusiasm and interest and support for a program are vital elements in the success of any school innovation. Second, all students in the experimental WTR in the classroom program averaged at least two writing levels higher then those in the control group and had a significantly higher positive reading attitude than the control group. Third, parents in the WTR experimental classrooms gave a 95 percent rating of how much they liked the program and their children liked it. They gave a 99 percent rating on knowing about their child's reading and writing. In the control groups over 50 percent of parents had no idea what program of reading or writing was being used in the classroom (Casey, 1990).

According to Freyd and Lytle (1990), a weakness of most studies of WTR programs is that they fail to consider alternative explanations of the findings. They listed four possibilities: 1) the likelihood of Hawthorne effects at the WTR site, particularly in the early years of implementation; (2) the location of early WTR sites in schools or districts supportive of innovation; (3) the greater willingness of teachers participating in WTR to experiment than their non-WTR colleagues; and (4) since most WTR classrooms have at least one additional staff member in the room, and often two, any effects attributed to WTR could result from reduced pupil-staff ratios and concomitant increased time-on-task.

Several studies of the WTR programs identified specific
problems with the program itself. Naron (1986) stated that

> WTR is clearly an exciting but expensive program.
> Unfortunately due to a poor implementation design that
> did not allow for the assessment of the relative
> contribution of WTR in comparison to competing programs,
> the cost-effectiveness of WTR could not be validly
> evaluated. However, the findings with respect to the
> outcome measure of reading and writing were much weaker
> than expected (p. 4).

Haines and Turner (1987) reported weaknesses revolving around
the need for a revised record keeping system; the amount of
expendable paper and markers required for the programs, the need for
additional software before, during, and after the ten-cycle core;
and the limited unclear information in the teacher manual.

> By far, the most frequently expressed concern related to
> the issue of what would happen to WTR children when they
> reached first grade. Average and above average students
> who progressed easily through the ten software cycles and
> who, currently, are able to write and read short stories
> are . . . significantly better writers and readers than
> previous groups of students they had instructed. They
> were concerned that first grade teachers who receive
> these students would recognize and continue to nurture
> these talents (Haines & Turner, 1987, p. 27).

Among other criticism Mavrogenes, Hageman, and Wallace (1989,
p. ix) wrote that

> WTR does indeed appear to help children's word analysis
> skills, but a pencil and paper approach seems to help
> more than just these skills. An expensive program with
> computers does not seem necessary to help young children
> learn to compose, to read, and to spell.

Freyd and Lytle (1990, p. 84) stated that, "designs of initial
teaching alphabets have not been sufficiently grounded in empirical
research to support their use for any beginning language arts
program, including computer-based ones." Singh (1991, p. iii)

wrote that "it [was] concluded that the WTR program is not cost-effective because relatively inexpensive programs such as the Individualized Language Arts program used in this study are known to have produced equally good or better results."

In an effort to measure the "effect size" of studies conducted of WTR programs, Slavin (1990) reviewed 29 studies from 22 school districts. According to Slavin (1990), an effect size is the difference between the experimental and control groups divided by the control group's standard deviation, adjusted for any pretest differences. In general, an effect size of +25 or more is considered significant. The median effect size for studies of WTR on kindergarten is +23. However, in first grade studies, the positive effect sizes in some studies were canceled out by equally large negative effect sizes in others. Thus the median effect size for the first grade studies was zero.

According to Decker (1991, p. 10), "unless the classroom teacher has a whole language philosophy, there will be little, if any, carry over from what is learned in the WTR lab to reading instruction in the classroom." Huenecke (1992a) pointed out yet more problems with the WTR program.

> Time governed virtually every aspect of the program.
> . . . the time allotments for the mini-periods (stations)
> were strictly followed. Each was of equal length and at
> each, children were expected to start and stop promptly.
> One of the by-products of this emphasis on time was an
> excessive amount of waiting. Conversely, time
> fragmentation led to unnatural stopping. Children who
> were engrossed in work often had to stop without reaching
> closure. . . . these conditions led to an implicit value
> of speed and the expectation that children start and
> start fast, work fast, and stop abruptly (p. 175).

Huenecke (1992b) also identified a lack of freedom on the part of

the student to choose materials.

> The material offered few, if any choices. Whether they
> were listening to tapes, using the software, or working
> in the textbooks, students had few choices about what or
> how they could learn. They listened to stories on the
> tapes, not of their own choosing, but because the stories
> were available (p. 56).

Huenecke (1992a) also noted that

> time demands, space requirements, equipment expenses, and
> behavioral expectations not only limited individual
> expression but also created an imbalance and restricted
> the integration of the program with the larger curriculum
> of the district (p. 57).

Another shortcoming of the WTR program was identified by

Partridge (1993). A great deal of available software is presented

in a step-by-step manner, and there are students who do not process

information in this manner. The software used with an individual

must be suitable for that student's learning style. Some students

prefer a holistic approach; others a skill and practice approach.

Therefore, for success with computer programs, students learning

styles must first be determined (p. 3).

While most WTR studies found positive results such findings

were not universal. Nor were those findings universally accepted,

as seen by the criticism of the WTR research.

Evaluation of the Southeast Kansas

WTR Consortium

Data from the 1993-94 school year were obtained under the

direction of Dr. Robert Harrington, external evaluator for the WTR

Consortium. Included were Teacher Satisfaction Surveys and Student

Satisfaction Surveys. These survey instruments were also

administered to teachers and students who participated in the WTR

program during the 1994-95 school year for comparison purposes.

The population for the Harrington evaluation came from the 10

school districts in southeast Kansas which had incorporated WTR in

the instruction in first grade classrooms. A total of 44 first grade

classrooms participated in the study. There were 22 classrooms in

the experimental group in which WTR instruction was provided and 22

classrooms in the control group in which WTR instruction was not

provided. The experimental group consisted of 22 teachers and 531

first grade students and the control group consisted of 22 teacher

and 183 first grade students and 22 teachers who had been randomly

selected from their classrooms. Teacher and student surveys were

employed to determine teacher and student satisfaction with the WTR

project (See Appendixes A and B).

The Gates-MacGinitie Reading Tests, Third Edition, Level R,

Form K, a group achievement measure of reading, was given to the

students in the study. Results were based on those first grade

students who had both a pre-test score and a post-test score.

According to Harrington (1995),

> Level R, form K of the test was used for this evaluation
> study since it is the test which is appropriate for
> children in the first grade. This reading test was chosen
> because it has good reliability and validity, is a
> nationally normed and standardized measure of beginning
> reading skills, is widely used and respected in the field
> and contains fall and spring norms which were necessary
> for the pre-test and post-test comparisons which were to
> be conducted. Level R, form K of the test was chosen in
> consultation with a representative from Riverside
> Publishing Co. which publishes the Gates-MacGinitie
> Reading Tests. Level R form K contains four subtests

including Letter-Sound Correspondences: Initial
Consonants and Consonant Clusters; Letter Sound
Correspondences: Final Consonants and Consonant Clusters;
Letter-Sound Correspondences: Vowels; and Use of Sentence
Context. The test renders four subtest standard scores
and one standard score for the total. Level R form K of
the test contains 60 items (p. 19).

The six stages of the WTR program were also used with those

students in the experimental group to determine at what stage they

ended the year. The WTR system identifies six stages of writing

development. Progress through the WTR program can be tracked by

using the stages of writing development of the students. The six

stages of writing development are:

STAGE 1: Cycle word writing
Whole word units
Beginning phonemic understanding

STAGE 2: New word writing
Phonemic understanding
Application

STAGE 3: Phrase/sentence writing
Unrelated phrases
Pictures and captions
Simple sentences

STAGE 4: Simple story writing
Simple related sentences with or without pictures
Assisted self-editing

STAGE 5: Intermediate story telling
Compound/complex sentences similar to student's
speech
Assisted self-editing

STAGE 6: Advanced story writing
Complex content and length
Self-editing with minimal assistance

Portfolio assessments of student performance were also

conducted by selecting two student exemplars who were representative

of two different types of student performance.   According to

Harrington (1995),

> The first student will serve as an exemplar of a 'typical
> student' who started at Level 1 in the WTR program and
> who moved to Level 6 in the program. . . . The second
> student will serve as an exemplar of a 'typical student'
> who started at a somewhat more advanced level but made
> only moderate progress in the WTR program and finished at
> Level 4 in the program (p. 32).

Teachers of WTR programs from the 10 participating school

districts were given the Writing to Read Teacher Satisfaction

Survey. The survey consisted of 10 statements. A Likert-type

instrument was used where a rating of "1" meant "strongly disagree"

and a rating of "5" meant "strongly agree". Twenty-two teachers took

part in the spring 1994 survey.

In an attempt to create a non-threatening questionnaire for

first grade students, the Writing to Read Student Satisfaction

Survey used pictures to represent possible student responses. A

Likert-type instrument was designed where number "1" was designated

by an "unhappy face" and meant "no"; number "2" was designated by a

"neutral face" and meant "unsure"; and number "3" was designated by

a "happy face" and meant "yes". The student survey was administered

to 531 first grade students in the spring of 1994.

The Gates-MacGinitie Reading Tests, Third Edition, Level R,

Form K was administered as a pre-test in November of 1993 to 485

first grade students in the experimental group and to 183 first

grade students in the control group. The fall norms for the test

were used in the scoring. In May, the same test was administered as

a post-test to both the experimental group and the control group

using spring norms for scoring.

Students who participated in WTR were also evaluated on the

"Documentation Form for the Demonstrated Improvement Within the Six

Stages of the Writing to Read Program." Student progress was

identified by which stage they began the WTR program and on which

stage they were in May.

Additionally, two students were selected as representative of

those first grade students who participated in WTR. According to

Harrington (1995),

> two judges were employed to determine that the student
> exemplars were representative of two types of student
> performance. The first student will serve as an exemplar
> of a 'typical student' who started at Level 1 in the WTR
> program and who moved to Level 6 in the program. . . .
> The second student will serve as an exemplar of a
> 'typical student' who started at a somewhat more advanced
> level but made only moderate progress in the WTR program
> (p. 32).

Much like two students were selected to represent "typical"

students in WTR, a "typical" classroom was also identified as being

representative of the other 22 WTR classes in the Project. Under the

direction of Harrington (1995), "three judges decided upon one class

which would be described in detail as an exemplar of the types of

issues and problems that arose and the typical pattern of

performance demonstrated during the Writing to Read Program"

(p. 33).

The Woodcock-Johnson Psychoeducational Battery, Revised Test,

was administered to 60 students who participated in WTR and to 60

students from the control group who did not participate in WTR. Nine

subtests were selected from the Cognitive and Achievement portions of the test. The nine subtests administered were: Writing Fluency, Visual Matching and Visual-Auditory Learning, Passage Comprehension, Letter-Word Identification, Dictation, Writing Samples, Word Attack, Sound Blending, and Achievement.

Achievement Testing

The Gates - MacGinitie Reading Tests, Third Edition, Level R, Form K, was used as the pre-test and the post-test for the study. The four subtests contained in Level R, Form K are:

        Letter-Sound Correspondences
            Initial Consonants
            Consonant Clusters
        Letter-Sound Correspondences
            Final Consonants
            Consonant Clusters
        Letter-Sound Correspondences
            Vowels
        Use of Sentence Context

Results only from students who had taken the Gates-MacGinitie Reading Tests as both a pre-test and a post-test were included in the Harrington study. This totaled 458 first grade students from the experimental group which received WTR instruction and 183 students from the control group who did not receive WTR instruction. The pre-test was administered by the WTR teachers in November of 1993, and the post-test was administered in May of 1994. Table I presents the pre-test and post-test results on the four subtests of the Gates - MacGinitie Reading Tests by stanine scores, difference scores, and t-tests for difference scores.

TABLE I

PRETEST AND POSTEST STANINE SCORES AND DIFFERENCE SCORES
AND T-TESTS FOR DIFFERENCE SCORES FOR THE FOUR
SUBTESTS AND TOTAL SCORE OF THE
GATES-MACGINITIE READING TESTS
(1989)

Group	Stanine Mean	SD	Difference Mean	SD	t-value
Subtest 1					
Pretest	5.46	1.92			
Posttest	4.96	1.38	0.49	1.84	*6.69
Subtest 2					
Pretest	5.84	1.87			
Posttest	5.32	1.74	0.53	1.87	*7.19
Subtest 3					
Pretest	5.85	1 80			
Posttest	5.37	1.56	0.48	1.67	*7.24
Subtest 4					
Pretest	5.58	1.73			
Posttest	5.07	1.72	0.51	1.66	*7.81
Total Score					
Pretest	5.63	1.59			
Posttest	5.39	1.75	0.24	1.32	*4.66

* $P=.000$ with $df = 640$

Source: Harrington, 1995, p. 21.

Results shown in Table I indicate that, on the four subtests
and the total score on the Gates – MacGinitie Reading Tests, the
stanine scores went up in an absolute sense. There were

statistically significant changes from pretest to post-test on all four subtests and the total score. What this means is that students in both the experimental and the control groups increased their scores from pretest to post-test (Harrington, 1995).

Data regarding the mean scores for all students in the experimental group classroom and the randomly selected students from the control group classes combined is reported in Table II showing the stanine, normal curve equivalent (NCE), percentile ranking, and grade equivalent.

TABLE II

PRETEST AND POSTTEST NORMAL CURVE EQUIVALENT SCORES (NCE),
PERCENTILE RANKS, AND GRADE EQUIVALENT SCORES FOR THE
TOTAL SCORE ON THE GATES-MACGINITIE READING
TESTS (1989)

| Total Score | Difference | | | | Grade | |
	NCE	SD	Mean	SD	%ile Rank	Equivalent
Pretest	56.34	16.63			59.71	1.15
Posttest	52.27	17.45	*4.08	12.90	53.66	1.99

* t=8.00, df=640, p=.000
Source: Harrington, 1995, p. 23.

According to Harrington (1995), Table II data show that the experimental and control groups increased in their normal curve equivalent scores from pretest to post-test in an absolute sense. There were statistically significant differences from pretest to post-test.

Table III data illustrate means and standard deviations for NCE total scores when comparing pretest and post-test results for the experimental and control groups on the Gates-MacGinitie Reading Tests.

TABLE III

A COMPARISON OF PRETEST AND POSTTEST MEANS AND STANDARD DEVIATIONS
FOR NCE TOTAL SCORES FOR EXPERIMENTAL AND CONTROL GROUPS ON THE
GATES-MACGINITIE READING TESTS (1989)

	NCE Mean	SD	Mean
Experimental	54.67	17.06	
Pretest			
Control	60.54	14.72	
Experimental	51.71	17.36	*53.94
Posttest			
Control	53.65	17.66	*51.41

* F=5.53, p=.019
Source: Harrington, 1995, p. 25.

Results of Table III show that, once post-test scores were adjusted for differences in sample size, there were statistically significant differences from pretest to post-test between the experimental and control groups in favor of the experimental group (Harrington, 1995).

Table IV is used to compare the pretest and post-test means and standard deviations for stanine scores for the four subtests for the experimental and control groups on the Gates-MacGinitie Reading Tests. Harrington (1995) indicated that the results reported in Table IV show significant differences between the experimental and the control groups in favor of the experimental group on three of the four subtests (p. 29).

Additional analysis of data was performed by Harrington to determine if any differences existed between males and females in either the experimental or control groups. According to his findings, "no significant differences between males and females in the experimental and control groups on the mean normal curve equivalent scores when post-test scores were adjusted were shown" (p. 29). He went on to state that "there were no sex differences between males and females in the experimental and control groups on the mean stanine scores of the Gates-MacGinitie Reading Tests when post-est results were adjusted, except for Subtest One."

TABLE IV

A COMPARISON OF PRETEST AND POSTTEST MEANS AND STANDARD DEVIATIONS
FOR STANINE SCORES FOR THE FOUR SUBTESTS FOR THE EXPERIMENTAL AND
CONTROL GROUPS ON THE GATES-MACGINITIE READING TESTS

	Stanine Mean	Stanine SD	Adjusted Posttest Mean
Subtest 1			
Experimental	5.27	1.92	
Pretest			
Control	5.93	1.84	
Experimental	4.97	1.38	*5.09
Posttest			
Control	4.96	1.37	*4.83
Subtest 2			
Experimental	5.69	1.91	
Pretest			
Control	6.22	1.70	
Experimental	5.34	1.73	*5.50
Posttest			
Control	5.26	1.76	*5.09
Subtest 3			
Experimental	5.71	1.81	
Pretest			
Control	6.20	1.73	
Experimental	5.37	1.55	**5.53
Posttest			
Control	5.38	1.59	**5.22
Subtest 4			
Experimental	5.43	1.75	
Pretest			
Control	5.96	1.61	
Experimental	4.97	1.73	***5.17
Posttest			
Control	5.32	1.66	***5.12

*   F=6.308, p=.012
** F=10.161, p=.002
***F=8.288, p=.044
Source: Harrington, 1995, p. 25.

After statistical comparisons were made on the results of the Gates-MacGinitie Reading Tests administered to first graders in both the experimental and control groups, Harrington found that experimental groups performed better on three of the four subtests and the total score when post-test adjustments were made for differences in sample size.

In order to determine if a ceiling effect was a factor in the data, a median split procedure was applied to the data to allow comparison and evaluation of the bottom 50 percent of the experimental and control groups and also the upper 50 percent of the experimental and control groups. Harrington (1995) explained the results.

> After this median split analysis was conducted, it was found that there were significant differences from pretest to post-test for experimental subjects in the lower half of the median split when a paired t-test statistical analysis was applied to Subtests 1, 2, and 3 of the Gates-MacGinitie, but not for Subtest 4 or for the NCE. On the other hand, none of the four subtests of the Gates-MacGinitie showed a statistically significant increase from pretest to post-test for students in the lower portion of the median split of the control group. There was however, a statistically significant increase for the NCE score from pretest to post-test for this group. What this means is that students in the experimental group initially performing in the bottom half of the scores of the Gates-MacGinitie were able to improve significantly on all subtests but Subtest 4 and the NCE. On the other hand, students in the control group initially performing in the bottom half of the scores of the Gates-MacGinitie were not able to improve significantly on any of the subtests of the Gates-MacGinitie, except for the NCE. These results would suggest that there was a ceiling effect operating in the original analysis and that students in the lower half of the experimental group were able to show significant gains in reading while subjects in the control group were not able to do so (pp. 29-30).

<u>National Normed Tests</u>

Originally, the intent of the Southeast Kansas WTR Consortium

was to include in its evaluation of the WTR program scores from

nationally normed achievement tests such as the Iowa Tests of Basic

Skills, California Achievement Tests, and the Metropolitan Test of

Basic Skills. However, in the opinion of Harrington and the

evaluation committee, this was not feasible due to the wide variety

of achievement tests administered in each of the ten participating

school districts. Valid comparisons would be difficult at best under

the circumstances. A tentative review of these tests early in the

program did provide insight into the abilities of the experimental

and control groups as a whole. Harrington (1995) noted that,

> in general, the skills of the children in the study were
> evaluated on these group measures as having average
> skills in reading. It was interesting to note, however,
> that the performance of children varied considerably not
> only within the same classroom but also between classes.
> The most important point to be made after reviewing these
> group test scores is that the group of children in this
> evaluation were in general in the average range of
> readers (p. 30).

<u>Six Stages of WTR Evaluation</u>

Table V shows the frequency of the highest WTR stages reached

by students in the experimental group at the last assessment for

each participating school. The date of the last assessment for each

school differs greatly from January in one school to May in others.

Despite the time lapse in assessments, Table V shows that progress

through the six stages of the WTR program was accomplished by most

of the first grade participants. An examination of the data included

in Table V shows that most of the students began at either
Pre-Writing or Stage 1: Cycle Word Writing stage and the majority
finished at level 4 (43 percent); followed by level 5 (27 percent);
and level 6 (13 percent).

TABLE V

FREQUENCY OF HIGHEST WTR STAGES REACHED AT LAST ASSESSMENT
FOR EACH PARTICIPATING SCHOOL DISTRICT

Dates of Latest Assessment	Pre-W		1		2		3		4		5		6	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Apr. to May	0	0	0	0	0	0	2	11	8	44	7	39	1	6
Late March	0	0	2	12	10	58	3	18	2	12	0	0	0	0
Jan to Apr.	0	0	0	0	0	0	1	4	3	10	13	45	12	41
Jan to Mar	0	0	0	0	0	0	1	6	14	82	1	6	1	6
Oct. to Mar	0	0	0	0	0	0	2	10	9	45	7	35	2	10
May	0	0	0	0	0	0	0	0	10	50	7	35	13	15
Dec.	0	0	0	0	0	0	0	0	19	90	2	10	0	0
Feb. to Apr.	0	0	0	0	0	0	0	0	2	11	12	63	5	26
Mar to Apr.	0	0	0	0	0	0	0	0	10	48	7	33	4	19
May	0	0	0	0	0	0	0	0	11	92	1	8	0	0
Apr. to May	0	0	0	0	1	5	4	19	14	66	2	10	0	0
March	0	0	0	0	0	0	4	17	17	70	3	13	0	0
Jan	0	0	0	0	0	0	1	7	7	50	6	43	0	0
Feb.	2	9	19	86	1	5	0	0	0	0	0	0	0	0
Apr. to May	0	0	0	0	2	10	1	5	10	50	7	35	0	0
Apr.	0	0	0	0	0	0	11	61	5	28	2	11	0	0
May	0	0	0	0	0	0	0	0	10	100	0	0	0	0
Mar	0	0	0	0	0	0	3	20	5	33	6	40	0	0
May	0	0	0	0	0	0	0	0	22	11	14	73	3	16
Mar to Apr.	0	0	0	0	0	0	0	0	20	87	3	17	0	0
Mar	0	0	0	0	0	0	0	0	1	50	1	50	0	0
Total (N=467)	2	1	21	4	15	3	40	9	201	43	125	27	63	13

Source: Harrington, 1995, p. 31.

<u>Student Exemplars</u>

Under the direction of Harrington (1995), two independent evaluators were chosen to select two students who were participating in WTR. Individual students were chosen to represent "typical" WTR students who participated in WTR as a way to demonstrate the personal dimension of the program. The students were selected based on their performance in WTR and were considered typical of each group they were selected to represent. The first student chosen was considered to exemplify a "typical student" who began the WTR program at Level 1 and who progressed to Level 6. Harrington (1995) described "student #1."

> The child began school able only to write her name. By September this child was able to label pictures with words. In October student #1 was writing stories on her own and was engaged in pattern writing. From November until the end of the calendar year the student improved and extended her skills by writing simple sentences, followed by simple stories, and used capitalization correctly. The teacher described her stories as 'similar to her speech.' By January the child was engaged in self-editing. The stories in February showed increasing detail and complex content (p. 32).

The second student chosen as exemplar started WTR at a more advanced level than did student #1 but made only moderate progress through the six stages of the program finishing at Level 4. Harrington (1995) described "student #2."

> The child seemed to be advanced in his skills beginning the school year at Level 3. At that time he was working on complete sentences, and using capitalization and punctuation correctly. The teacher noted that the child was experiencing emotional problems that may be interfering with his reading and writing achievement. By December he was writing a complete thought in his sentences and by February he was writing detailed stories with some punctuation, but not much punctuation. By

February, he was writing simple related sentences, showed
better punctuation skills and was beginning to use
capitalization skills more correctly (pp. 32-33).

Class Exemplar

In addition to the two individual student exemplars, an entire

first grade class participating in the WTR project was selected as

being representative of the 22 WTR classrooms in the experimental

group. Three independent judges were selected under the guidance of

Harrington to review class profiles of the WTR classrooms and to

select one class as exemplar of the others. "Three judges decided

upon one class which would be described in detail as an exemplar of

the types of issues and problems that arose and the typical pattern

of performance demonstrated during the Writing to Read Program"

(Harrington, 1995, p. 33). The first grade class chosen consisted

of 20 students, 10 were males and 10 were females. These students

were at various levels of WTR when the program began in November.

Seventeen students started at Level 3 and two at Level 2 and one

student entered after the program had begun. When the students'

progress was checked in May it was found that 12 students had

reached Level 4, four had reached Level 5, and four of the students

had achieved Level 6. Following are a series of observations of

each student compiled by the teacher and reported by Harrington

(1995).

Student #1: In November student #1 was writing sentences using

repetitive phraseology such as, "I like . . . " By March, writing

appeared to be more enjoyable for the student. She was creating

simple stories with interesting and varied beginnings, middles, and endings. Much more elaboration and depth was included in her later stories.

Student #2: Began the program at Level 4 and remained at that stage for the duration of the project. Student #2 was able to develop a story about his cat and created a book in the shape of a cat. The book was recognized as a prize winner in a local contest for young authors.

Student #3: Described as "very capable," but his capability doesn't always come through in his writing. The teacher describes this student as being verbal and sociable. By May student #3 had moved from Level 3 to Level 4 and was still using invented spelling.

Student #4: Described as very imaginative, although he is a "young six year old." This student developed his writing skills by elaborating his work as the program continued. By May, he had moved from Level 3 to Level 4.

Student #5: Appears to have already been writing complete sentences when he entered the WTR program. He easily developed stories with a beginning, middle, and end. Punctuation was attempted and phonetic spelling was used. Some stories demonstrated expression and excitement.

Student #6: This student moved from Level 1 to Level 5 in four weeks. He began the program by dictating his story, then began to write simple short stories and ended the program by writing a short story about his grandfather dying.

Student #7: Described as extremely immature. According to the teacher first grade was a "rude awakening", but he has made "tremendous gains." Student #7 began at Level 2 and finished in May at Level 4.

Student #8: Experienced some problems with articulation which have contributed to her problems with spelling, phonics, and reading. Her stories began with redundant phraseology such as "I like . . ." but slowly developed into some simple short stories.

Student #9: Showed vast differences in the portfolio entries from the beginning of the program to the end. She started with rather simple short stories about her friend in Missouri.

Student #10: Made "tremendous" improvement from the start of the program to the end moving from unrelated sentences to advanced stories.

Student #11: Described as a "bright" student, and as a "man of few words, unless the spotlight is on him". He only moved from Level 3 to Level 4.

Student #12: Began by writing simple sentences and ended the year writing simple stories.

Student #13: Excellent example of a child who has moved from using invented spelling techniques to using more accurate spelling.

Student #14: Described as a child with excellent sequencing skills and a writer of stories with lots of details.

Student #15: Described as a child with great imagination and good motivation, but the mechanics of writing seem to get in the way. He does best if he can dictate the story rather that type it on

the computer. Had a particular problem with spacing. Student #15 is described as an auditory learner.

Student #16: Described as a student who had a positive attitude toward WTR. Her good attitude is reflected in the stories she composed.

Student #17: Began the program at Level 4. Teacher described student #17 as having "great understanding of the writing process." By March she was using compound sentences and by May was freely expressing her feelings in her stories.

Student #18: Described as very quite and shy. According to the teacher this student made "tremendous" progress in WTR.

Student #19: Began at Level 3 and finished at Level 5. When this student began the program he started by writing sentences with good punctuation and capitalization. By May, he was writing good stories with a beginning, middle, and end. Student #19 wrote a book which was selected for recognition by the Young Author's Conference.

Student #20: Described by his teacher as very young, but an excellent student. He has poor coordination and handwriting but is able to produce phonetically spelled words.

Woodcock-Johnson Psychoeducational

Battery Revised

Under the guidance of Harrington, six graduate students in the School of Psychology at the University of Kansas administered nine subtests of the Woodcock-Johnson Psychoeducational Battery, Revised, to 60 first grade students from the experimental group who

had received WTR instruction and 60 first grade students from the
control group who had not participated in WTR. Pre-testing was
conducted during November and December and the same test was
administered as a post-test to the students in April and May.

> The Writing Fluency subtest had to be dropped from the
> statistical analysis because the results were deemed to
> be unreliable; the subtest appeared to be generally too
> difficult for most of the students. Analysis of variance
> showed there were no statistical differences from
> pre-testing to post-testing between the experimental and
> control groups on the following Cognitive subtests:
> Visual Matching and Visual-Auditory Learning. There was a
> statistical difference from pre-testing to post-testing
> between the experimental and control groups in favor of
> the experimental group on the Sound Blending subtest.
> This is a subtest which requires the subject to recognize
> a word for which a sound has been deleted. The test
> requires auditory recognition and auditory discrimination
> skills. On the Achievement portion of the WJ-R Battery
> there was no significant difference from pre-testing to
> post-testing between the experimental and control groups
> on the following Achievement subtests: Passage
> Comprehension and Letter-Word Identification. On the
> other hand, there was a significant difference from
> pre-testing to post-testing between the experimental and
> control group in favor of the experimental group on the
> following Achievement subtests: Dictation, Writing
> Samples, and Word Attack. Dictation assesses a child's
> skills in punctuation, spelling and usage. Writing
> Samples assesses a child's ability to construct coherent
> sentences and eventually to create stories with a
> beginning, middle, and ending. Lastly, Word Attack is a
> subtest that requires children to sound out words. The
> subtests on which the Writing to Read students performed
> superiority to the control group were subtests which
> assess many of the areas emphasized in the Writing to
> Read Program (Harrington, 1995, pp. 39-40).

It would appear, that after a review of the literature
resulting from various research studies of the WTR program, positive
effects on student achievement had been identified. Whether these
results could be attributed to the use of computer assisted

instruction, increased time on task, infusion of reading and writing into the curriculum of kindergarten classrooms, or the Hawthorne Effect is an area in need of additional longitudinal study. Taking into account the criticisms directed at the WTR system of instruction, it does seem, in the short-term at least, to improve student achievement in the areas of writing and reading.

CHAPTER III

RESEARCH DESIGN

This chapter contains a review of the research design for this study of the Southeast Kansas Writing to Read (WTR) Consortium. The purpose of the study was to examine students', teachers', and superintendents' perceptions of the development and implementation of the WTR program in first grade classrooms in 10 school districts in Southeast Kansas, to determine the effect of WTR on the reading and writing skills of the students, and to assess the effectiveness of the consortium service delivery model.

The following research questions were used to guide the study.

(1) How was the Southeast Kansas WTR Consortium developed? What roles were played by superintendents in its development and implementation?

(2) How do the superintendents of the participating school districts view the effectiveness of the WTR program and of the consortium delivery model used in the Southeast Kansas WTR Consortium?

(3) Has the WTR program provided more effective instruction in writing and reading skills than programs traditionally provided in the schools?

(4) Do teachers and students perceive that participation in the Southeast Kansas WTR Consortium has improved reading and writing skills of first grade students?

(5) Are the students and teachers who participated in WTR satisfied with the program?

Populations

Three different populations were used in the collection of data for this study: students, teachers, and superintendents. The first population consisted of 531 first grade students who had responded to the 1994 student survey conducted by Harrington (1995). The same student satisfaction survey was administered to 404 first grade students during 1995.

The second population was comprised of the 17 first grade teachers who taught in the 10 consortium member school districts in both the 1993-94 and 1994-95 school years. The final population consisted of the 10 school district superintendents.

Instruments

Three different instruments were used in this study. The first two, for student and teacher surveys, were designed jointly by Harrington and representatives of the Southeast Kansas Education Service Center for his assessment of the WTR program during the 1993-94 school years. The third was developed for this study and was designed to obtain superintendents' perceptions of the consortium project.

The Writing to Read Teacher Satisfaction Survey consisted of 10 statements. A Likert-type instrument was used where a rating of "1"

meant "strongly disagree" and a rating of "5" meant "strongly
agree".

The instrument was designed to determine teacher satisfaction
with the WTR program. A copy of the survey is found in Appendix A.

The Writing to Read Student Satisfaction Survey consisted of 10
statements. The purpose was to determine the level of student
satisfaction with the WTR program. The survey instrument used
pictures to represent possible student responses. A Likert-type
instrument was designed where number "1" was designated by an
"unhappy face" and meant "no"; number "2" was designated by a
"neutral face" and meant "unsure"; and number "3" was designated by
a "happy face" and meant "yes". A copy of the survey is found in
Appendix B.

The Superintendent Survey Instrument was developed with input
from the Southeast Kansas Education Service Center WTR staff based
on observations and conversations between service center staff and
selected superintendents who represented school districts with
existing WTR programs as well as those whose WTR programs were
funded under the WTR consortium. A copy of the survey instrument can
be found in Appendix C. The statements and questions on the survey
instrument were designed to allow superintendents to comment about
the WTR program in general terms and specifically about their school
districts experience. The questionnaire consisted of 14 items.
Seven of the items were statements using a Likert-type response
where the number "1" meant "strongly disagree" and the number "5"
meant "strongly agree". The remaining six items gave the

superintendents an opportunity to comment on various aspects of the WTR program and the Southeast Kansas Writing to Read Consortium. A copy of the survey is found in Appendix C.

Data Collection and Analysis

The 1994 Teacher Satisfaction Survey was administered to the WTR teachers during an inservice meeting in April, 1994. The 1995 survey instrument was mailed to the WTR teachers in April of 1995 and returned to the Southeast Kansas Education Service Center one week later. Both instruments were transferred to scoring sheets by personnel at the Southeast Kansas Education Service Center and electronically scored.

Both the 1994 and 1995 student satisfaction surveys were

uring a WTR class period in April

n completion of the survey

nswer sheets were forwarded to the

 Center where the data was

swer sheets which were

enter personnel.

 mailed to the superintendents of

cts in April, 1995. They were

to the researcher. Data obtained

atements were scored to determine

uperintendent comments from the

series of informal interviews

conducted with the superintendents about their involvement with the WTR program. These comments are reported in Chapter IV.

The Application for Review of Human Subjects Research for this study was reviewed and processed with an exempt status September 12, 1994 by the Oklahoma State University Institutional Review Board. A copy of the IRB application is found in Appendix F.

Summary

The purpose of this study was to examine perceptions held by students, teachers, and superintendents of the WTR program and the Southeast Kansas WTR Consortium. Satisfaction surveys were administered to 905 students and 22 teachers participating in WTR over a two year period. A Superintendent Survey was completed by the 10 superintendents in the Spring of 1995. The data from the surveys were collected in accordance with the approved IRB application and scored by the Southeast Kansas Education Service Center. Results were reported by Harrington (1995) and in this study.

CHAPTER IV

PRESENTATION AND INTERPRETATION OF DATA

This study was designed and conducted to examine the development, implementation, and evaluation of the Southeast Kansas Writing to Read Consortium. The collected data and the analysis of those data are the subject of this chapter. This chapter begins with a descriptive review of the project participants and a brief history of the Southeast Kansas WTR Consortium. In the second and third sections results of a Teacher Satisfaction Survey and a Student Satisfaction Survey administered to teachers and students in the WTR project are reported and compared for the 1993-94 and 1994-95 school years. Data obtained from a superintendent survey administered during the second year of the WTR consortium are then reported. Finally, comments from the superintendents of schools of the ten participating school districts along with comments from administrators representing the Southeast Kansas Educational Service Center and the William L. Abernathy Charitable Trust are presented.

Southeast Kansas WTR Consortium

Beginning in 1993, a group of southeast Kansas superintendents who were members of a grant writing consortium at the Southeast Kansas Education Service Center at Greenbush, Kansas, began to discuss possible means by which they could address their concerns about improving educational opportunities for students. It was

determined by this group that improvement of reading and writing

skills was critical if these opportunities were to exist. Due in

part to the success that Galena U.S.D. 499 was experiencing with

first grade students, the IBM WTR program was selected as the method

by which the unique needs of children who reside in the rural,

economically depressed area of southeast Kansas could be addressed.

Based on previous cooperative efforts between Galena U.S.D. 499 and

various charitable trusts, a plan was developed to request financial

support for the development of a consortium delivery model which

would provide WTR programs for ten school districts. The resulting

proposal was submitted by the Southeast Kansas Education Service

Center on behalf of the ten school districts to the William L.

Abernathy Charitable Trust requesting financial support to replicate

the successful WTR program in Galena. The proposal was fully funded

in the requested amount of $415,000 to design, implement, support,

and evaluate a multi-district cooperative effort in placing the WTR

program in ten southeast Kansas school districts.

The ten school districts in the consortium were Fort Scott

U.S.D. 234, Cherokee U.S.D. 247, Girard U.S.D. 248, Frontenac U.S.D.

249, Marmaton Valley U.S.D. 256, Iola U.S.D. 257, Humbolt U.S.D.

258, Cherryvale U.S.D. 447, Labette County U.S.D. 506, and Baxter

Springs U.S.D. 508. Five of the school districts each had a student

population in excess of 1,000 students during the 1993-94 school

year (Fort Scott, Girard, Iola, Humbolt, and Labette County). The

remaining five school districts each had an enrollment of less than

1,000 students during the 1993-94 school year (Cherokee, Frontenac,

Marmaton Valley, Cherryvale, and Baxter Springs). Fort Scott U.S.D. 234 had the largest enrollment with 2,484 students and Marmaton Valley had the smallest number of students with 374. The total student population of the ten districts was 11,378 with an average number of students per district of 1,138. There were 22 first grade classrooms in the experimental group in which WTR instruction was provided. The remaining 22 first grade classrooms made up the control group in which WTR instruction was not provided. For the project evaluation, then, the experimental group during the 1993-94 school year consisted of 531 first grade students and the control group consisted of 183 first grade students who were randomly selected from the 22 control group classrooms during the 1993-94 school year.

The Southeast Kansas WTR Consortium began with acceptance of the funding request by the William L. Abernathy Charitable Trust in September, 1993. Computers, software, and other WTR-related materials were ordered for each participating school district at a cost of $27,317 per WTR laboratory. These were procured through the Southeast Kansas Education Service Center's role in coordination of the consortium. The first school district to receive the WTR materials was Marmaton Valley in early November, 1993. The final delivery of WTR materials came in December for the remaining school districts. Throughout the spring semester of the 1993-94, school year cooperative efforts on the part of the superintendents and WTR teachers ensured success of the program. On numerous occasions computer parts and software were exchanged between school districts.

Teacher inservice sessions for teachers and administrators involved with the project were scheduled to begin in October, 1993. Through the regular inservice sessions a free exchange of ideas was observed by the program participants. A camaraderie developed between and among the WTR teachers as well as building administrators and superintendents. The series of five inservice sessions continued through May of 1994. Students began receiving instruction in the WTR program in November, 1993.

Table VI contains a summary of the budget for the WTR consortium.

The evaluation component of the Southeast Kansas WTR Consortium was developed as a cooperative effort among the ten participating school districts. Dr. Robert Harrington, a professor from Kansas University, served as the external evaluator of the project. The various program evaluation components were approved at a meeting of the program participants. It was determined that the evaluation of the Southeast Kansas WTR Consortium would be based on the following:

* To evaluate the effectiveness of WTR in teaching first
   graders to learn to read.

* To evaluate the satisfaction of teachers participating in WTR
   with this approach to learning to read.

* To evaluate the satisfaction of first grade students learning
   to read using WTR with this approach to learning to read.

* To evaluate the qualitative gains in reading performance
   among students using WTR as assessed by teachers.

TABLE VI

SOUTHEAST KANSAS WRITING TO READ BUDGET

Budget Category	Expenditure Budget
PERSONNEL	
Project Coordinator (.15 Full Time Equivalent) Responsible for overall coordination of project.	$6,750,00
Reading and Writing Specialist (1.0 Full Time Equivalent) Responsible for providing each school district with training and instructional and technical support regarding WTR instruction.	$30,000.00
On site Coordinators (1.0 Full Time Equivalent) Responsible for supporting student instruction in each participating school district. One-half with school district match based on an annual compensation of $12.000.	$60,000.00
TRAVEL	
Travel expenses of Reading and Writing Specialist and Project Coordinator for training and technical support between districts. 450 miles per month x .26 cents x 12 months.	$1,404.00
CONTRACTUAL	
Independent Evaluation Consultant responsible for the implementation of the outcomes based evaluation. $150 x 65 days.	$9,750.00
EQUIPMENT AND TECHNOLOGY	
Ten Writing to Read laboratories @ 27,317.00 each.	$273,170.00
PROFESSIONAL DEVELOPMENT	
Staff training reviewing WTR, including instructional strategies and laboratory operation and travel expenses of presenter.	$4,000.00
Awareness and technical inservice training for teachers, administrators, and parents designed to support WTR.	$5,000.00
FACILITY	
Up to $2,500 per district for remodeling expenses and workstations required for WTR.	$25,000.00
PROJECT TOTAL	$415,000.00

* To evaluate the qualitative gains in reading performance
among students using WTR as assessed by students.

* To evaluate the scores on national group tests of achievement
in reading.

* To identify areas in need of change in the implementation of
WTR (Harrington, 1995).

Multiple assessments were to be employed to determine the
effectiveness of the WTR program. These included the Gates-
MacGinitie Reading Test (Third Edition, Level R, Form K) and the
Woodcock-Johnson Psychoeducational Battery, Revised. Data regarding
student progress through the six stages of the WTR program would be
provided through development of portfolios. Teacher satisfaction
surveys and student satisfaction surveys were to be administered to
WTR participants over a two-year period. Results were to be reported
by Harrington (1995) from the spring, 1994 surveys compared with the
spring of 1995 data. Both surveys would use the same satisfaction
survey instrument.

Teacher Surveys

Teachers involved in the WTR program during the 1993-94 and
1994-95 school years took part in a survey to assess their
satisfaction with the program. The survey consisted of ten
statements. Responses were scored using a five-point Likert-type
scale. A rating of "1" meant "strongly disagree" and a rating of
"5" meant "strongly agree." A total of 22 teachers completed the
survey in the spring of 1994 and 17 of these same teachers did so in

the spring of 1995. The five teacher surveys that were not returned

in 1995 were from Cherryvale U.S.D. 447, Baxter Springs U.S.D. 508

and Fort Scott U.S.D. 234. While only 17 surveys were obtained, it

should be noted that all 22 teachers in WTR classrooms in 1993-94

returned to their same arrangements the following year. The

questions, means, and standard deviations are summarized in Table

VII. Complete results of the WTR Teacher Satisfaction Survey are

found in Appendix D.

The impact of WTR on teachers in helping them become better

reading teachers was reported more positively in the program's

second year. Over 63 percent of the teachers in the pilot year

either moderately agreed or strongly agreed that the WTR program had

helped them to be better reading teachers. This percentage rose to

76.5 for the 1994-95 school year. Every one of the teachers in 1995

reported that the program had helped their students improve their

reading skills as compared to 95.5 percent in 1994. First grade

teachers participating in WTR were also unanimous in their judgment

that the use of computer-assisted instruction, as used in WTR, was a

positive feature of the program.

When asked if they would recommend WTR to other teachers, 68.2

percent in 1994 strongly agreed and 82.4 percent in 1995 strongly

agreed. This was an increase of 14.2 percentage points between the

first year and second year of the program. In 1994, 27.3 percent and

17.6 percent in 1995 moderately agreed they would recommend the

program.

TABLE VII

PERCENTAGES, MEANS, AND STANDARD DEVIATIONS FOR
RESPONSES TO THE TEACHER SATISFACTION SURVEY

QUESTION	1994*		1995	
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
The Writing to Read program has helped me be a better teacher.	3.7	0.90	4.18	0.78
The Writing to Read program has helped my students improve their reading skills.	4.41	0.58	4.65	0.48
The use of computer-assisted instruction is a positive feature of the Writing to Read program.	4.91	0.29	4.88	0.32
I would recommend the Writing to Read program to other teachers.	4.64	0.57	4.82	0.38
My students seemed to enjoy the Writing to Read program.	4.95	0.21	4.71	0.46
The Writing to Read program was clear and easy to use.	3.91	0.85	4.59	0.49
I approve of the phonemic approach to reading employed in the Writing to Read program.	4.50	0.78	4.24	0.81
The Writing to Read program was easy to manage.	3.64	1.19	4.24	0.73
I liked the relationship between reading and writing expressed in the Writing to Read program.	4.86	0.34	4.94	0.24
There is little I would change about the Writing to Read program.	3.68	1.14	4.12	0.58

Source: Harrington, 1995, p. 16.

In 1994, 95.5 percent of the teachers strongly agreed that their students enjoyed the WTR program. This percent dropped in 1995 when only 70.6 percent of the teachers strongly agreed with the statement. However, for both years, 100 percent either moderately agreed or strongly agreed that student enjoyment of the WTR program was evident.

All of the teachers responding to the survey in 1995 either moderately agreed or strongly agreed that WTR was clear and easy to follow. This represented almost a 25 percent increase over such responses to the same statement the previous year. Management of the WTR program may have become easier for teachers after a second year since teachers' responses were 20 percent more positive in 1995 than in 1994. While there were no negative responses to the management statement in 1995, in 1994, one in five teachers had a negative response to the statement.

In both years the survey was administered, 100 percent of the teachers either moderately agreed or strongly agreed that they liked the relationship between reading and writing expressed in the WTR program. In 1994 86.4 percent and in 1995 94.1 percent of the teachers strongly agreed.

<div align="center">Student Surveys</div>

In April of 1994 and April of 1995, all first grade students who were participating in WTR were administered the Student Satisfaction Survey. While Harrington (1995) reported that 531 first grade students had responded in the 1993-94 school year,

404 first grade students responded in the 1994-95 school year, in part because student surveys were not returned from Cherryvale U.S.D. 447 for the 1994-95 school year. A three-point Likert-type scale was employed for scoring purposes. The survey was designed by the Southeast Kansas Education Service Center under the guidance of Harrington (1995). Each question had three possible responses: "1" was designated by an "unhappy face" and meant "no," "2" was designated with a "neutral face" and meant "unsure," and "3" was designated by a "happy face" and meant "yes." After the students received directions for taking the survey, they were asked to circle their responses to the statements. The surveys were then forwarded by each teacher to the Southeast Kansas Education Service Center where the responses were transferred by a Service Center employee to answer sheets that could be electronically scored. Results of the Student Satisfaction Survey are presented in Table VIII. Complete results of the WTR Student Satisfaction Survey are presented in Appendix E.

Student responses to the WTR Student Satisfaction Survey were for the most part, consistent for both years the survey was administered. Students were generally positive about the WTR program. An increase in "yes" responses was noted in survey statements which asked the student if they liked computers and if they liked to read and write.

TABLE VIII

PERCENTAGES, MEANS, AND STANDARD DEVIATIONS FOR STUDENT
RESPONSES TO THE STUDENT SATISFACTION SURVEY

QUESTION	1994*		1995	
	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
I like to read.	1.18	0.47	1.18	0.48
I like to write.	1.24	0.54	1.12	0.52
I like computers	1.07	0.31	1.06	0.30
The computer helps me learn to read.	1.17	0.48	1.24	0.55
Reading is fun this year.	1.21	0.51	1.22	0.53
I will read during the summer.	1.44	0.71	1.44	0.72
I like my reading teacher.	1.04	0.24	1.05	0.26
I like how I was taught to read.	1.12	0.36	1.13	0.41
I can sound out hard words.	1.15	0.45	1.18	0.49
I like reading more now than before.	1.15	0.46	1.17	0.49

Source: Harrington, 1995, p. 18.

A decline in "yes" responses to the statement, "The computer helps me learn to read," occurred during the 1994-95 school year. In 1993-94, 86.8 percent of the students responded favorably to the statement while in the 1994-95 school year the positive response rate declined to 82.5 percent.

One of the survey items was used to ask the students if they planned to read during the summer. The responses by year showed little change. In 1994, 69.1 percent said they would read during the summer. In 1995, this percentage was 69.6. Several students were unsure, 18.3 percent in 1994 and 16.7 percent in 1995. The percentage of students indicating that they did not plan to read in the summer of 1994 was 12.6 while for the summer of 1995 it was 13.7 percent.

A resounding response of yes was returned when the students were asked if they liked their reading teacher. The affirmative response rate was 96.4 percent in 1994 and 96.3 percent in 1995. Approval was also indicated by the students of the methodology employed in the WTR program. In 1994, 90 percent of the students confirmed that they liked how they were taught to read. Eighty-nine percent responded positively in 1995.

Over 88 percent of the respondents in 1994 and over 86 percent in 1995 indicated that they could sound out hard words. Eighty-eight percent of the first graders in both years of the survey stated that they liked to read then more than they had before WTR.

Superintendent Survey

Research question number four asks; "How do the Superintendents of the participating school districts view the effectiveness of the consortium delivery model used in the Southeast Kansas Writing to Read Consortium?" Data were obtained by examination of responses to a Superintendent Satisfaction Survey instrument administered to each superintendent whose district participated in WTR. Additionally, a series of discussions and interviews were conducted with each superintendent, selected Southeast Kansas Education Service Center personnel, and the Chairman of the Trustees of the William L. Abernathy Charitable Trust.

Seven of the Superintendent's Survey items required the respondent to indicate agreement or disagreement with a statement. Responses were scored using a Likert-type scale wherein the number "1" meant "strongly disagree" and the number "5" meant "strongly agree." A summary of these statements and responses are found in Table IX.

When asked to rate the overall effectiveness of the WTR Program, as either inadequate, fair, average, good, or excellent, 100 percent of the superintendents rated the program as good or excellent. Eight rated WTR as excellent. Responses to the statement yielded a mean of 4.8 and a standard deviation of 0.42.

All of the superintendents either moderately agreed or strongly agreed that WTR had helped students in their districts improve their reading skills. Ninety percent stated that WTR had been a positive

influence on the writing skills of first grade students in their districts. One respondent indicated that inadequate data were available in his district to accurately determine the effect on writing skills.

TABLE IX

MEANS AND STANDARD DEVIATIONS FOR RESPONSES TO
THE SUPERINTENDENT'S SURVEY

ITEM	MEAN	STANDARD DEVIATION
1) THE WRITING TO READ PROGRAM HAS HELPED THE STUDENTS IN MY DISTRICT IMPROVE THEIR READING SKILLS.	4.8	0.52
2) THE WRITING TO READ PROGRAM HAS HELPED THE STUDENTS IN MY DISTRICT IMPROVE THEIR WRITING SKILLS.	4.5	0.71
3) I WOULD RECOMMEND THE WRITING TO READ PROGRAM TO OTHER SCHOOL DISTRICTS.	4.8	0.42
4) THE STUDENTS IN MY DISTRICT SEEM TO ENJOY THE WRITING TO READ PROGRAM.	5.0	0.00
5) THE TEACHERS IN MY DISTRICT SEEM TO ENJOY THE WRITING TO READ PROGRAM.	4.8	0.42
6) THERE IS LITTLE I WOULD CHANGE ABOUT THE WRITING TO READ PROGRAM.	4.8	0.42
7) MY DISTRICT'S EXPERIENCE WITH WRITING TO READ WAS ENHANCED BY PARTICIPATION IN A CONSORTIUM DELIVERY MODEL.	4.4	0.42

The ten superintendents surveyed were in agreement that they would recommend the WTR program to superintendents in other school districts. Eight strongly agreed about the likelihood of such recommendations and two moderately agreed.

All of the superintendents strongly agreed that the students in their districts seemed to enjoy the WTR program. Eight strongly agreed with the statement "The teachers in my district seem to enjoy the WTR Program" while two moderately agreed with the statement.

Responses to the statement "There is little I would change about the WTR Program", were mixed. Five superintendents strongly agreed with the statement, four moderately agreed, and one neither disagreed nor agreed.

All ten superintendents recognized the importance of the staff development activities provided through the Southeast Kansas Education Service Center in support of WTR. Inservice activities were seen as productive and useful in assisting WTR teachers with the implementation and development of the individual programs. These inservice activities were viewed as having a direct impact on the success of the WTR program in Girard U.S.D. No. 248. According to Superintendent Dr. John Battatori, when asked to comment on benefits of the WTR consortium, "I believe our people have gained from the experience of having the opportunity to work with other school districts through the inservice training provided through the Southeast Kansas Education Service Center."

Superintendents were asked to respond to the question; "In your opinion, what was the single most important advantage to your

district's participation in the Southeast Kansas Writing to Read Consortium?" Answers revolved around three themes. First was the direct effect WTR was perceived to have had on improved academic success and student motivation. Secondly, the financial benefits of belonging to the consortium were identified. A third theme was the impact of computer technology on first grade students. The response of Mr. Aubrey Schultz, Superintendent of Cherryvale U.S.D. No. 447, was typical of the other statements. Mr. Schultz stated that, "obviously, financial savings [but] --more important--tremendous student academic and increased self-esteem."

Superintendents were asked to identify what types of additional or follow-up activities should be provided in support of WTR. The need to continue improvement and support of the reading and writing skills developed through WTR was indicated. Dr. Garry Church, Superintendent of Humbolt U.S.D. No. 258, wrote that "additional programs [were needed] to reinforce and build on skills learned as students advance to the next grade level." Superintendent Ernie Price of Marmaton Valley U.S.D. No. 256 added "We feel that, to maintain the overall impact, similar programs need to exist throughout the primary level." Other comments indicated similar positions supporting the expansion of strategies and methodologies associated with WTR to other classrooms within the same district and integration of other curricular areas with WTR.

All of the superintendents surveyed were able to identify benefits their school districts had received by participation in the consortium. Financial support to the school districts was not often

lists as the primary benefit. The provision of the WTR hardware, software, related materials, and staff development services in addition to support for facilities and personnel had been obtained at a savings over the usual cost a single school district would incur. Organization of staff development and related inservice activities provided by the Southeast Kansas Education Service Center was also considered to be a benefit to participating school districts. Participation in a multi-district cooperative program also provided opportunities for teachers to network and exchange ideas and materials used in the various WTR laboratories. Superintendent of Cherokee U.S.D. No. 247, Dr. Thomas Woolbright, identified a significant benefit to all participating school districts when he stated that "the most important benefit of WTR is the introduction of technology to young people who would otherwise have been denied access."

Several of the participating school districts expanded the WTR program during the 1994-95 school year at the districts' own expense. Five of the school districts (Fort Scott, Labette County, Cherokee, Baxter Springs, and Marmaton Valley) installed the IBM Writing to Write, Form I, program in second grade classrooms. Two of the school districts with student enrollment in excess of 1,000 students (Fort Scott and Labette County), installed additional WTR programs in other first grade classrooms in elementary schools within their districts. Eight school districts (Girard, Cherryvale, Humbolt, Frontenac, Baxter Springs, Labette County, Cherokee, and Marmaton Valley) installed additional software programs which were

designed to support and expand the original WTR program. Mr. Bill

Sailors, Superintendent of Schools at Fort Scott U.S.D. No. 234,

stated his school district's commitment to expanding WTR.

> The evaluation just reinforced my belief that WTR is
> a tremendous program. We believe so strongly, we've
> added WTR at the other district's elementary school
> at the district's expense. We're anticipating adding
> more computer labs and software to incorporate the
> program K-5.

Expansion of the WTR program, purchase of supporting software,

and/or installation of a second year of programming did not occur in

all of the participating school districts. In those schools, failure

to expand the scope of WTR was not reported to be a result of

dissatisfaction with the program but rather of insufficient

financial resources. Dr. Wes Dreyer, Superintendent of Schools at

Iola U.S.D. No. 257, indicated his district's position by writing

that "our participation in the consortium has created a very strong

desire in our other elementary buildings to have the same program--

only the lack of resources prevents the district from proceeding."

All of the superintendents were positive about the

effectiveness of the consortium delivery model. Each of the ten

participating superintendents agreed that without the funding from

the grant and staff development activities organized by the

Southeast Kansas Education Service Center, installation of WTR in

the participating school districts would not have occurred. Comments

by the Superintendent of Cherryvale U.S.D. No. 447, Mr. Aubrey

Schultz, affirmed his support for the WTR consortium delivery model.

This is perhaps the best project I have ever been
involved in as a school administrator. The benefit
to the kids is obvious. Parent and community response
has been tremendous. The pride of our patrons in
the school has increased dramatically.

Because of previous experiences with programs provided in the

Southeast Kansas Education Service Center delivery area, the WTR

consortium was not a unique cooperative experience for the ten

participating school districts. Superintendents were unanimous in

their agreement that the WTR consortium delivery model was

appropriate. In their opinion, if school districts had acquired WTR

on an individual basis, the cost would have been greater and the

support network, which developed as a result of the inservice

activities, would not have occurred at the current level among WTR

teachers and building administrators.

Perspectives of the consortium delivery model from the chairman

of the William L. Abernathy Charitable Trust, Mr. John Archer,

differed from those of the superintendents. Previous educational

programs supported by the Trust had been funded in individual school

districts. The Southeast Kansas Writing to Read Consortium was the

first attempt at providing financial resources to multiple school

districts through a cooperative effort managed by an independent

agency. Although Mr. Archer recognized the financial savings to an

individual school district, in his opinion the resulting absence of

working directly with an IBM vendor prevented each district from

creating a WTR program unique to its situation. He said that,

I've not been totally convinced that the cost savings
with the consortium have outweighed the benefit of each
client meeting with vendors, being sold the package and,
establishing a relationship. I wonder if something is not

lost when the consortium employee's contract is with a
number of programs and has no personal economic
interest.

The concept of "Ownership" in other educational programs funded
by the Abernathy Charitable Trust is an important ingredient to
their success according to Mr. Archer. When asked for his opinion of
the consortium delivery model he replied

> frankly, my personal, unscientific preference, and gut
> feeling of success is, the individual programs have been
> the most effective, efficient and, on balance, have
> performed better. The reason seems to be, in my opinion,
> when we have a request for a program, and we review the
> applicant they need to convince us that they want, and
> will execute the program with enthusiasm. The consortium
> programs are selected and monitored by others. Where we
> are not approached I sometimes feel the programs are
> offered similar to free samples of sausage biscuits at
> Sam's Wholesale Club--it's free and has some value, so
> I'll take it, why not? . . .
>   When a district, a school, a teacher, or an
> administrator comes to us and asks for the program, they
> have ownership and responsibility. When they are offered
> the program to try, like the Sam's sample, they are
> looking down the aisle for the next sample of crackers
> and cheese.

A different view of consortium delivery models was held by
those familiar with coordinating such programs. When asked to
evaluate the effectiveness of the WTR Consortium model, Mr. David
DeMoss, Executive Director of the Southeast Kansas Education Service
Center, cited the financial savings to school districts through
increased buying power and inservice opportunities and activities.
DeMoss explained that

> the Southeast Kansas Writing to Read Consortium endeavor
> . . .has allowed districts to pool their funds to
> purchase the equipment and software, leverage the dollar
> volume to achieve additional concessions from the
> company, and, in turn, deliver a high level of support
> for less money. In addition, the inservice delivery model
> was coordinated through the Education Service Center and

a more intense and effective student, teacher, and administrator training sequence was provided which expanded the inservice program a local district could manage on its own.

Inservice activities coordinated through the Southeast Kansas Education Service Center were considered to be a major benefit of the WTR Consortium by Mike Bodensteiner, Southeast Kansas Education Service Center Projects Director.

> Working as a consortium we were able to provide increased training for teachers and administrators. This training greatly enhanced the ability of teachers to implement the Writing to Read Program as well as established a network of educators providing collegial support and consultation which continues to this day. The Southeast Kansas Writing to Read Consortium illustrates the lasting impact business and private partnerships can have on public education.

Based on the input of the ten superintendents of schools in the districts participating in the WTR Consortium, it can be stated that WTR proved to have a positive impact in their school districts. The consortium delivery model was also considered to be effective not only by the superintendents but also by administrators from the Southeast Kansas Education Service Center. This model was seen as an effective means by which financial resources, inservice activities, and support services could be delivered to multiple school districts. A representative from the sponsoring charitable trust disagreed that a consortium was an effective way to distribute financial support. It was his opinion that a lack of ownership and only a moderate level of commitment existed among the participating school districts.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

AND COMMENTS

This final chapter provides an overview of the study. The
first portion contains a summary of the WTR consortium. The next
two sections are used to report conclusions and recommendations
which are derived from the findings. The final section contains a
commentary which reflects on the WTR consortium delivery model and
possible implications.

Summary

With the generous support of the William L. Abernathy
Charitable Trust, the Southeast Kansas WTR Consortium became a
reality in September, 1993. Superintendents from the ten school
districts in southeast Kansas which made up the consortium were
attempting to improve the reading and writing skills of first grade
students in their districts. The WTR program was selected as the
instructional vehicle by which this improvement process could occur.
The WTR program was chosen because it provided for the delivery of
individualized, interactive, and computer-enhanced instruction that
was specifically designed to improve reading and writing skills of
primary students. As students progress through the five workstations
and the six levels or stages of WTR, they are expected to acquire

reading and writing skills by using a phonemic spelling system. The premise of WTR is that students learn to read by first learning to write what they can already say.

A review of literature revealed a variety of previous studies of WTR. Although almost all of the studies, using a number of different evaluation criteria, showed gains by students involved with WTR, many of those studies were considered by critics to be flawed. A few were considered to have not adequately controlled for internal and external validity, several studies were of short duration, and, though the attempt was made in a few of the studies to identify the WTR program itself as being responsible for student gains, most delivered what criteria termed to be disappointing results.

The purpose of this study of WTR was to determine if the program was effective in improving reading and writing skills of first grade students in southeast Kansas. The following research questions were established to guide the study.

1) How was the Southeast Kansas WTR Consortium developed? What roles were played by superintendents in its development and implementation?

2) How do the superintendents of the participating school districts view the effectiveness of the WTR program and of the consortium delivery model used in the Southeast Kansas WTR Consortium?

3) Has the WTR program provided more effective instruction in writing and reading skills than programs traditionally provided in the schools?

4) Do teachers and students perceive that participation in the Southeast Kansas WTR Consortium has improved reading and writing skills of first grade students?

5) Are the students and teachers who participated in WTR satisfied with the program?

The ten member school districts of the Southeast Kansas Writing to Read Consortium were Fort Scott U.S.D. 234, Cherokee U.S.D. 247, Girard U.S.D. 248, Frontenac U.S.D. 249, Marmaton Valley U.S.D. 256, Iola U.S.D. 257, Humbolt U.S.D. 258, Cherryvale U.S.D. 447, Labette County U.S.D. 506, and Baxter Springs U.S.D. 508. Forty-four first grade classrooms were involved in the study. There were 22 classrooms in the experimental group in which WTR instruction was provided and 22 classrooms in the control group in which WTR instruction was not provided. The experimental group then consisted of 531 first grade students and the control group consisted of 183 first grade students who were randomly selected from the 22 control group classrooms. Student Satisfaction Surveys were administered to the WTR students in the spring of 1994 and in the spring of 1995. A total of 532 student surveys were scored in 1994 and 404 surveys were received in 1995.

Evaluation of the study was based on student performance on the Gates-MacGinitie Reading Tests, Third Edition Level R, Form K; progress through the six stages of the WTR program; and nine

subtests from the Woodcock-Johnson Psychoeducational Battery,
Revised (Writing Fluency, Visual Matching and Visual-Auditory
Learning, Passage Comprehension, Letter-Word Identification,
Dictation, Writing Samples, Word Attack, Sound Blending, and
Achievement). In addition, student and teacher satisfaction surveys
were administered to the program participants.

Twenty-two teachers during the 1993-94 school year and 17
teachers during the 1994-95 school year responded to the Teacher
Satisfaction Survey which was comprised of ten statements with
Likert-type responses where a rating of "1" meant strongly disagree
and a rating of "5" meant strongly agree. The mean score ranged from
3.64 to 4.95 with a standard deviation range from 0.21 to 1.19 for
the 1993-94 school year. The 1994-95 means ranged from 4.12 to 4.95
with a standard deviation range from 0.24 to 0.81.

A total of 531 first grade students responded to the Writing to
Read Student Satisfaction Survey for the 1993-94 school year and 404
did so for the 1994-95 school year. Students responded to the
statements using a three-point Likert-type scale. Each statement
had three possible responses: "1" was designated by an "unhappy
face" and meant "no," "2" was designated with a "neutral face" and
meant "unsure," and "3" was designated by a "happy face" and meant
"yes." Overall the student survey data showed that students who
participated in WTR viewed computers as being a positive addition to
their education and saw a strong relationship between WTR and
improved reading and writing skills.

All of the superintendents of schools whose districts were involved with the WTR consortium responded to a Writing to Read Superintendent's Satisfaction Survey. The results indicated that WTR was viewed as having a positive impact on the reading and writing skills of students. Additionally, the consortium delivery model was seen as an effective means by which financial resources, inservice activities, and support services could be delivered to multiple school districts.

Conclusions

1. The Writing to Read program had a positive influence on the development of reading and writing skills of first grade students. Data from Harrington (1995) as well as data collected for this study consistently supported this conclusion.

2. Teachers and students liked the Writing to Read program. Results of the survey showed a strong pattern of positive responses regarding WTR.

3. Superintendents believe that multiple school districts of varying size can cooperate in a consortium effort to develop, fund, implement, manage, and evaluate an educational program with positive results. Although this perception was unanimous among the superintendents, a dissenting opinion was stated by the chairman of the William L. Abernathy Charitable Trust.

4. School districts are more likely to implement innovative programs, particularly expensive innovative programs, when the financial resources are provided from an external source.

Recommendations

1. Related studies should be made to determine if teachers involved with WTR and the teachers' strategies, methodologies, and techniques associated with that program influence the way they provide instruction in other subject areas.

2. Additional studies of the consortium delivery model and other cooperative projects among school districts should be conducted.

3. A study to determine the role of superintendent in the change process and in the consortium delivery model should be made.

4. A replication of this study in other WTR programs should be considered to test the validity of this study and to identify variables unique to various WTR program settings.

5. Related studies on the influence of external funding on school districts should be considered. A longitudinal study should be conducted to determine what happens to a school district and its special programs and projects when the external source of funds ends.

Commentary

This study has focused on the effectiveness of the WTR program with first grade students in ten southeast Kansas school districts during the 1994-1995 school year in part in comparison with the findings of Harrington (1995) based on data collection during the 1993-94 school year. The original focus of the study emphasized the development of a positive and motivating educational environment

that would allow elementary students, who were often considered to be at risk of school failure, to improve their skills in reading and writing. The data obtained from this study indicate this purpose was accomplished.

Just as important, although not empirically grounded, was the overwhelming positive attitude and enthusiasm displayed by both students and teachers. In the opinion of this writer, if an ethnographic study were to be conducted in any of the first grade WTR laboratories, evidence of a heightened learning environment would be found. Students would be actively engaged in a variety of activities which allow them to communicate their thoughts to others. The importance of the development of reading and writing skills for primary students will become evident as they progress through the educational system. A solid foundation has been laid upon which future growth will be possible.

Differences in entry level skills of first grade students can be widespread. While exposure to a computer-enhanced WTR laboratory provides critical assistance to those students whose entry level skills may be behind those of others, the WTR experience can give all students a better beginning in school. It provides equal educational opportunities for the students, regardless of the skills they bring with them to first grade.

Participation in the WTR program provides the students with basic skills associated with computer technology. Each of the participating school districts provided instruction in keyboarding skills along with the WTR program. It is worth noting that personal

experience has shown that first exposure to the WTR laboratory

causes considerable excitement among the students due to the novelty

of computer usage. After a few weeks with the program, the

excitement transfers from the computer as the major focus to what

the computer as a tool allows the students to accomplishment. The

computer became a tool through which the first graders could write

their thoughts and then read them to others. These students will

more likely embrace advances in technology, not with apprehension,

but with open arms.

The cooperation among school districts in this study could not

have occurred without the consortium delivery model employed by

the Southeast Kansas WTR Consortium. Pooling of financial resources

and the resulting buying power meant that the participating school

districts were able to obtain the WTR program materials at a

substantial savings. Staff development activities which were

coordinated through the Service Center were also a critical factor

in the Consortium's success. Coordination among school districts

should prove to be of benefit to students in a variety of ways.

Another reason for the success of the Southeast Kansas WTR

Consortium is the noncompetitive collaboration that existed among

the superintendents of the ten WTR school districts. This

environment had evolved over the years because of participation by

these superintendents and their school districts in other

cooperative activities coordinated through the Southeast Kansas

Education Service Center. School districts voluntarily belong to a

variety of programs and services, including cooperative purchases of

food items for the cafeteria, computer technology purchasing, sporting goods and equipment, and textbooks as well as, curriculum development, staff inservice and leadership training, and grant writing opportunities.

Even though the willingness to work cooperatively existed among the school districts in southeast Kansas, without the opportunities presented by the financial support of the William L. Abernathy Charitable Trust the WTR consortium would likely not have occurred. Most of the superintendents possessed a limited knowledge of the WTR program and none of the school districts likely could afford the financial strain on already tight budgets. It is interesting to note that, although the financial support was not readily available to start up the WTR program, after boards of education members, parents, community members, and staff began to see the benefit of the program on the students, support for expansion of the WTR program for the second year existed in nine of the ten participating school districts. The Southeast Kansas WTR Consortium was successful in raising reading and writing skills of first grade students and in using the consortium delivery model for goods and services in support of the program.

Postscript

As a direct result of the success of the WTR consortium efforts were made on behalf of the ten school districts to continue to search for innovative ways to assist their students. A grant proposal to establish an elementary at-risk program in each of the

districts was submitted to the William L. Abernathy Charitable

Trust for the 1994-95 school year. The proposal requested funding

to replicate a successful elementary at-risk program already in

existence in U.S.D. No. 499 in Galena, Kansas. The grant was

approved as submitted in the amount of $375,000. The Southeast

Education Service Center served as the coordinator of the At-Risk

Consortium and used the delivery model established in the WTR

consortium the previous year.

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APPENDIXES

APPENDIX A

WRITING TO READ TEACHER

SATISFACTION SURVEY

CIRCLE THE RESPONSE WHICH BEST DESCRIBES YOUR REACTION TO EACH OF THE STATEMENTS. A RATING OF "1" INDICATES YOU STRONGLY DISAGREE WITH THE STATEMENT. A RATING OF "5" INDICATES THAT YOU STRONGLY AGREE WITH THE STATEMENT.

1) The Writing to Read Program has helped 1 2 3 4 5
me be a better reading teacher.

2) The Writing to Read Program has helped 1 2 3 4 5
my students improve their reading skills.

3) The use of computer-assisted instruction 1 2 3 4 5
is a positive feature of the Writing to
Read Program.

4) I would recommend the Writing to Read 1 2 3 4 5
Program to other teachers.

5) My students seemed to enjoy the 1 2 3 4 5
Writing to Read Program.

6) The Writing to Read Program was 1 2 3 4 5
clear and easy to use.

7) I approve of the phonemic approach 1 2 3 4 5
to reading employed in the Writing
to Read Program.

8) The Writing to Read Program was 1 2 3 4 5
easy to manage.

9) I liked the relationship between 1 2 3 4 5
reading and writing expressed in
the Writing to Read Program.

10) There is little I would change about 1 2 3 4 5
the Writing to Read Program.

APPENDIX B

WRITING-TO-READ STUDENT SURVEY

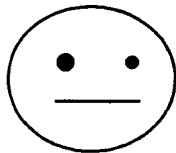NAME: _____ SCHOOL: _____

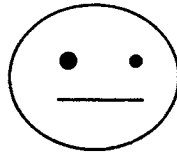1) I LIKE TO READ.

2) I LIKE TO WRITE.

3) I LIKE COMPUTERS.

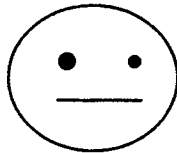4) THE COMPUTER HELPS ME TO LEARN TO READ.
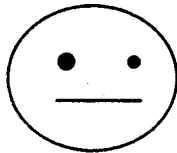
5) READING IS FUN THIS YEAR.

6) I WILL READ DURING THE SUMMER.

7) I LIKE MY READING TEACHER.

8) I LIKE HOW I WAS TAUGHT TO READ.

9) I CAN SOUND OUT HARD WORDS.
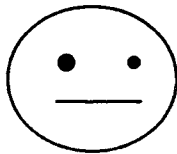
10) I LIKE READING MORE NOW THAN BEFORE.
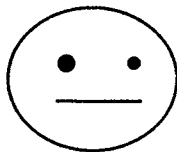
APPENDIX C

SUPERINTENDENT SURVEY WRITING TO READ

PROGRAM

SCHOOL DISTRICT
---

1) In your opinion what was the single most important advantage to your district's participation in the Southeast Kansas Writing to Read Consortium?

_____

2) Overall, I would rate the quality of the Writing to Read Program:

___Inadequate
___Fair
___Good
___Excellent

3) The Writing to Read Program has helped the students in my district improve their:

READING SKILLS

___Strongly Disagree
___Moderately Disagree
___Neither Disagree Nor Agree
___Moderately Agree
___Strongly Agree

WRITING SKILLS

___Strongly Disagree
___Moderately Disagree
___Neither Disagree Nor Agree
___Moderately Agree
___Strongly Agree

4) I would recommend the Writing to Read Program to other school districts.

___Strongly Disagree
___Moderately Disagree
___Neither Disagree Nor Agree
___Moderately Agree
___Strongly Agree

5) The students in my district seem to enjoy the Writing to Read Program.

___Strongly Disagree
___Moderately Disagree
___Neither disagree Nor Agree
___Moderately Agree
___Strongly Agree

6) The teachers in my district seem to enjoy the Writing to Read Program.

___Strongly Disagree
___Moderately Disagree
___Neither Agree Nor Disagree
___Moderately Agree
___Strongly Agree

7) There is little I would change about the Writing to Read Program.

___Strongly Disagree
___Moderately Disagree
___Neither Disagree Nor Agree
___Moderately Agree
___Strongly Agree

8) What types of additional or follow-up activities should be provided in support of the Writing to Read Program?

_____

_____

_____

9) Do you feel the Writing to Read Consortium provided your teachers with productive and useful staff development activities?

___YES   ___NO

10) My district's experience with Writing to Read was enhanced by participation in a consortium delivery model.

___Strongly Disagree
___Moderately Disagree
___Neither Disagree Nor Agree
___Moderately Agree
___Strongly Agree

11) As Superintendent, what suggestions would you have if your district has another opportunity to participate in a consortium delivery model similar to the Writing to Read Consortium?

_____

_____

_____

12) Identify benefits your district received by participation in a consortium.

_____

_____

_____

13) What, if any, programs has your district initiated as a result of the Writing to Read Program?

_____

_____

_____

14) Additional Comments. _____

_____

_____

_____

_____

_____

APPENDIX D

RESPONSES TO THE TEACHER

SATISFACTION SURVEY

TABLE X

PERCENTAGES, MEANS, AND STANDARD DEVIATIONS FOR RESPONSES TO THE
TEACHER SATISFACTION SURVEY

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE

QUESTION 1 : THE WRITING TO READ PROGRAM HAS HELPED ME BE A
            BETTER TEACHER.

	1994	1995
1 strongly disagree	0.0	0.0
2 moderately disagree	9.1	0.0
3 neither disagree nor agree	27.3	23.5
4 moderately agree	40.9	35.3
5 strongly agree	22.7	41.2

1994 mean = 3.77   standard deviation = 0.90
1995 mean = 4.18   standard deviation = 0.78

QUESTION 2 : THE WRITING TO READ PROGRAM HAS HELPED MY
            STUDENTS IMPROVE THEIR READING SKILLS.

	1994	1995
1 strongly disagree	0.0	0.0
2 moderately disagree	0.0	0.0
3 neither disagree nor agree	4.5	0.0
4 moderately agree	50.0	35.3
5 strongly agree	45.5	64.7

1994 mean = 4.41   standard deviation = 0.58
1995 mean = 4.65   standard deviation = 0.48

QUESTION 3 : THE USE OF COMPUTER-ASSISTED INSTRUCTION IS A
            POSITIVE FEATURE OF THE WRITING TO READ PROGRAM.

	1994	1995
1 strongly disagree	0.0	0.0
2 moderately disagree	0.0	0.0
3 neither disagree nor agree	0.0	0.0
4 moderately agree	9.1	11.8
5 strongly agree	90.9	88.2

1994 mean = 4.91   standard deviation = 0.29
1995 mean = 4.88   standard deviation = 0.32

TABLE X (Continued)

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE

QUESTION 4 : I WOULD RECOMMEND THE WRITING TO READ PROGRAM
            TO OTHER TEACHERS.

1 strongly disagree	0.0	0.0
2 moderately disagree	0.0	0.0
3 neither disagree nor agree	4.5	0.0
4 moderately agree	27.3	17.6
5 strongly agree	68.2	82.4

1994 mean = 4.64   standard deviation = 0.57
1995 mean = 4.82   standard deviation = 0.38

QUESTION 5 : MY STUDENTS SEEMED TO ENJOY THE WRITING TO READ
            PROGRAM.

1 strongly disagree	0.0	0.0
2 moderately disagree	0.0	0.0
3 neither disagree nor agree	0.0	0.0
4 moderately agree	4.5	29.4
5 strongly agree	95.5	70.6

1994 mean = 4.95   standard deviation = 0.21
1995 mean = 4.71   standard deviation = 0.46

QUESTION 6 : THE WRITING TO READ PROGRAM WAS CLEAR AND EASY
            TO USE.

1 strongly disagree	0.0	0.0
2 moderately disagree	9.1	0.0
3 neither disagree nor agree	13.6	0.0
4 moderately agree	54.5	41.2
5 strongly agree	22.7	58.8

1994 mean = 3.91   standard deviation = 0.85
1995 mean = 4.59   standard deviation = 0.49

TABLE X (Continued)

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE

QUESTION 7 : I APPROVE OF THE PHONEMIC APPROACH TO READING
EMPLOYED IN THE WRITING TO READ PROGRAM.

1 strongly disagree	0.0	0.0
2 moderately disagree	4.5	5.9
3 neither disagree nor agree	4.5	5.9
4 moderately agree	27.3	47.1
5 strongly agree	63.6	41.2

1994 mean = 4.50   standard deviation = 0.78
1995 mean = 4.24   standard deviation = 0.81

QUESTION 8 : THE WRITING TO READ PROGRAM WAS EASY TO
MANAGE.

1 strongly disagree	4.5	0.0
2 moderately disagree	18.2	0.0
3 neither disagree nor agree	13.6	17.6
4 moderately agree	36.4	41.2
5 strongly agree	27.3	41.2

1994 mean = 3.64   standard deviation = 1.19
1995 mean = 4.24   standard deviation = 0.73

QUESTION 9 : I LIKED THE RELATIONSHIP BETWEEN READING AND
WRITING EXPRESSED IN THE WRITING TO READ PROGRAM.

1 strongly disagree	0.0	0.0
2 moderately disagree	0.0	0.0
3 neither disagree nor agree	0.0	0.0
4 moderately agree	13.6	5.9
5 strongly agree	86.4	94.1

1994 mean = 4.86   standard deviation = 0.34
1995 mean = 4.94   standard deviation = 0.24

TABLE X (Continued)

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE
QUESTION 10: THERE IS LITTLE I WOULD CHANGE ABOUT THE WRITING TO READ PROGRAM.		
1 strongly disagree	4.5	0.0
2 moderately disagree	18.2	0.0
3 neither disagree nor agree	4.5	11.8
4 moderately agree	50.0	64.7
5 strongly agree	22.7	23.5

1994 mean = 3.68   standard deviation = 1.14
1995 mean = 4.12   standard deviation = 0.58

APPENDIX E

RESPONSES TO THE STUDENT

SATISFCTION SURVEY

APPENDIX E

RESPONSES TO THE STUDENT

SATISFCTION SURVEY

TABLE XI

PERCENTAGES, MEANS AND STANDARD DEVIATIONS FOR STUDENT RESPONSES TO
THE STUDENT SATISFACTION SURVEY

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE
QUESTION 1: I LIKE TO READ.		
1 Yes	84.4	86.1
2 Unsure	12.4	9.7
3 No	3.2	4.2

1994 mean = 1.18   standard deviation = 0.47
1995 mean = 1.18   standard deviation = 0.48

QUESTION 2: I LIKE TO WRITE.

1 Yes	80.9	82.9
2 Unsure	13.8	12.2
3 No	5.3	5.0

1994 mean = 1.24   standard deviation = 0.54
1995 mean = 1.12   standard deviation = 0.52

QUESTION 3: I LIKE COMPUTERS.

1 Yes	94.1	95.3
2 Unsure	4.5	3.2
3 No	1.3	1.5

1994 mean = 1.07   standard deviation = 0.31
1995 mean = 1.06   standard deviation = 0.30

QUESTION 4: THE COMPUTER HELPS ME TO LEARN TO READ.

1 Yes	86.8	82.5
2 Unsure	9.0	11.3
3 No	4.2	6.2

1994 mean = 1.17   standard deviation = 0.48
1995 mean = 1.24   standard deviation = 0.55

TABLE XI (Contnued)

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE
QUESTION 5: READING IS FUN THIS YEAR.		
1 Yes	83.5	83.5
2 Unsure	11.7	11.0
3 No	4.7	5.5

1994 mean = 1.21   standard deviation = 0.51
1995 mean = 1.22   standard deviation = 0.53

QUESTION 6: I WILL READ DURING THE SUMMER.

1 Yes	69.1	69.6
2 Unsure	18.3	16.7
3 No	12.6	13.7

1994 mean = 1.44   standard deviation = 0.71
1995 mean = 1.44   standard deviation = 0.72

QUESTION 7: I LIKE MY READING TEACHER.

1 Yes	96.4	96.3
2 Unsure	2.8	2.7
3 No	0.8	1.0

1994 mean = 1.04   standard deviation = 0.24
1995 mean = 1.05   standard deviation = 0.26

QUESTION 8: I LIKE HOW I WAS TAUGHT TO READ.

1 Yes	90.0	89.0
2 Unsure	8.5	8.5
3 No	1.5	2.5

1994 mean = 1.12   standard deviation = 0.36
1995 mean = 1.13   standard deviation = 0.41

QUESTION 9: I CAN SOUND OUT HARD WORDS.

1 Yes	88.3	86.3
2 Unsure	7.9	9.2
3 No	3.8	4.5

1994 mean = 1.15   standard deviation = 0.45
1995 mean = 1.18   standard deviation = 0.49

TABLE XI (Continued)

RESPONSE	1994 PERCENTAGE	1995 PERCENTAGE
QUESTION 10: I LIKE READING MORE NOW THAN BEFORE.		
1 Yes	88.8	88.0
2 Unsure	7.2	7.0
3 No	4.0	5.0

1994 mean = 1.15   standard deviation = 0.46
1995 mean = 1.17   standard deviation = 0.49

APPENDIX F

INSTITUTIONAL REVIEW BOARD

APPROVAL FORM

**OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW**

Date: 09-06-94   **IRB#:** ED-95-010

Proposal Title: DEVELOPMENT AND EFFECTIVENESS OF THE SOUTHEAST KANSAS WRITING-TO-READ CONSORTIUM

Principal Investigator(s): Gerald R. Bass, James C. Christman

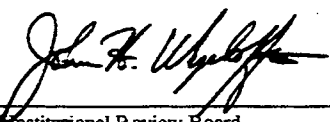**Reviewed and Processed as:** Exempt

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____   Date: September 12, 1994

Chair of Institutional Review Board

VITA

James C. Christman

Candidate for the Degree of

Doctor of Education

Thesis: DEVELOPMENT AND EFFECTIVENESS OF THE SOUTHEAST KANSAS
        WRITING TO READ CONSORTIUM

Major Field: Educational Administration

Biographical:

    Education: Graduated from Galena High School, Galena,
        Kansas in May, 1970; received a Bachelor of Science degree
        in Education with a major in Social Science from Missouri
        Southern State College, Joplin, Missouri in December,
        1974; received a Master of Science degree in Secondary
        School Administration from Pittsburg State University,
        Pittsburg, Kansas in July, 1981; received an Educational
        Specialist degree in Secondary School Administration from
        Pittsburg State University, Pittsburg, Kansas in July,
        1983; completed the requirements for the Doctor of
        Education degree with a major in Educational
        Administration at Oklahoma State University in July, 1995.

    Experience: Taught secondary social science at Galena High
        School in Galena, Kansas 1975-1981; taught secondary
        social science and served as administrative assistant at
        Webb City High School in Webb City, Missouri 1981-1983;
        served as Clerk of the Board and Assistant Superintendent
        for Galena U.S.D. 499 in Galena, Kansas 1983-1988; served
        as Superintendent of Schools for Galena U.S.D. 499 in
        Galena, Kansas since 1988.