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Andrews University

School of Education

THE IMPACT OF EARLY-INTERVENTION/PREVENTION
SERVICES ON THE NORTHVILLE
PUBLIC SCHOOLS

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Robert O. Sornson

July 2003

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Robert O. Sornson

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To my children and my wife,
who remind me each day of the ethical obligation
and
especially the joy of helping each child succeed.

ABSTRACT

THE IMPACT OF EARLY-INTERVENTION/PREVENTION
SERVICES ON THE NORTHVILLE
PUBLIC SCHOOLS

by

Robert O. Sornson

Chair: James A. Tucker

ABSTRACT OF GRADUATE STUDENT RESEARCH

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Andrews University

School of Education

Title: THE IMPACT OF EARLY-INTERVENTION/PREVENTION SERVICES
ON THE NORTHVILLE PUBLIC SCHOOLS

Name of researcher: Robert O. Sornson

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Problem

Whereas some school districts have continued to observe high rates of reading failure and increasing rates of special education identification, others have looked at program or system changes to reduce early learning failure. This study is an analysis of the impact of early intervention practices in the elementary schools of an upper-middle-class community.

Method

Cost analyses of district programs were compared to a hypothetical district with state average levels of special education identification. Special Education eligibility rates were tracked over a 10-year period. Data were collected from surveys given to Instructional-Support Team personnel, general education teachers, elementary

administrators, and parents. Standardized data were collected on students in third and fifth grades who had been identified and served through the Instructional Support Team (IST) process. Four research questions were posed:

1. Are early intervention and the use of instructional Support Teams cost-effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement?

Results

Cost savings to the district were noted by comparing Northville costs to a hypothetical district with state-average special education identification rates. District special education rates were reduced from 10.2% in 1992-93 to 6.6% in 2001-02. This compares with state average levels of 10.8% in 1992-93 and 13.3% in 2001-02. Parent, teacher, and administrator satisfaction rates were high. Students served by the early-intervention processes were found to be achieving, on average, at levels consistent with an expectation of success in general education.

Conclusions

Early-intervention efforts have contributed to reduced special education referrals and placements, and reduced long-term costs, and have been given high satisfaction ratings by teachers and parents. Students who were identified as at-risk and then served

through the early-intervention process were found, on average, to be achieving above national averages, and near district-average levels.

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CHAPTER ONE

INTRODUCTION

Background of the Problem

There are many reasons to try to prevent early-learning failure whenever possible. Early-learning success lays the foundation for a child's academic future. Children who come to believe they are good at reading, writing, mathematical thinking, and learning in general tend to be more successful throughout their entire school career (Alexander & Entwisle, 1988; Barnett, 1996; Campbell & Ramey, 1999; Cunningham & Allington, 1998; Lyon, 1997, 1998; Nieman & Gaithright, 1981; Torgeson, 1998; Van DeWalle, 1998).

Early-learning success is later associated with the absence of adolescent risky behaviors, including violence, dropping out of school, early sexual behavior, pregnancy, substance abuse, and delinquency (Blum, Beuhring, & Rinehart, 2000; Campbell & Ramey, 1999; Coleman, Rowland, & Hutchins, 1997; Copple, Cline, & Smith, 1987; Seitz, Rosenbaum, & Apfel, 1985; Wheeler, 1994).

The cost of allowing early-learning failure to persist has received significant attention in recent years. Rates of special education referral and identification continue to increase (Table 1). Children with learning disabilities make up approximately 50% of all identified special education students (Figures 1 and 2). Costs related to special education

Table 1

A Rising Tide of Disabilities in the United States Between 1976 - 1998

Category	1976-77	1987-88	1997-98
Autism ¹	0	0	42,487
Deaf-blindness ¹	0	1,426	1,454
Developmental delay ¹	0	0	1,935
Hearing impairments	55,116	56,742	69,537
Mental retardation	818,718	596,928	602,111
Multiple disabilities ¹	0	78,588	106,758
Orthopedic impairments	70,566	46,837	67,422
Other health impairments ²	115,867	46,013	190,935
(Serious) emotional disturbance ³	245,343	372,048	454,363
Specific learning disabilities	782,095	1,937,827	2,748,497
Speech or language impairments	1,170,531	951,512	1,065,074
Visual impairments	26,215	22,769	26,015
Traumatic brain injury ¹	0	0	11,895
Total, all disabilities	3,284,019	4,110,690	5,388,483

Note. From "The Changing Nature of Students' Disabilities" *Education Week* (p. 3), November 29, 2000, Bethesda, MD.

¹These categories were created in amendments to the Individuals with Disabilities Education Act after 1975.

²"Other health impairments" includes attention deficit hyperactivity disorder.

³"Serious emotional disturbance" was renamed "emotional disturbance" in 1997.

Table 2

The Changing Nature of Students' Disabilities, Listed as Categories, by National Percentage of Total Special Education

<i>Year</i>	<i>Category</i>	<i>Percentage</i>
1976-77	Specific Learning Disability	24%
	Speech and Language Impairment	36%
	Hearing Impairments	2%
	Mental Retardation	25%
	Other	14%
1987-88	Specific Learning Disability	47%
	Speech and Language Impairment	20%
	Hearing Impairment	1%
	Mental Retardation	15%
	Multiple Disabilities	2%
	Other	12%
1997-98	Specific Learning Disability	51%
	Speech and Language Impairment	20%
	Hearing Impairment	1%
	Mental Retardation	11%
	Multiple Disabilities	2%
	Other	15%

Note. From "The Changing Nature of Students' Disabilities" *Education Week* (p. 3), November 29, 2000, Bethesda, MD.

Rates of Identification: POHI and LD 1977 to 2000

Computing special education disabilities at a rate per 1,000 students
 Special Education data: December 1 federal counts
 Population figures: Michigan Enrollment - Pupil Accounting Office

Figure 1. Rates of identification: POHI and LD, 1977 to 2000.

Note. From information presented by the Michigan Department of Education, presented to the Council for Exceptional Children Conference, March 2001, Grand Rapids, MI.

1990-91	\$998M
1991-92	\$1,089
1992-93	\$1,173
1993-94	\$1,266
1994-95	\$1,411
1995-96	\$1,516
1996-97	\$1,613
1997-98	\$1,669
1998-99	\$1,760

Figure 2. Special education costs in Michigan

Note. From "Does Special Education Drain Schools?" by Anita Lienent, March 10, 2002, in the *Detroit News*, taken from Michigan Department of Education data. The costs for special education programs in Michigan, funded by both the state and federal governments, have grown 76 % in almost a decade (figures in millions of dollars).

There are many reasons to be concerned about the number of children who are experiencing significant learning frustration in the early years of school. These reasons include the general observation among teachers that increasing numbers of children are coming to school with significant language delays, motor skill delays, and behavior or social skill deficits.

Statement of the Problem

Whereas some schools or school districts have continued to observe high rates of reading failure and increasing rates of special education identification, others have looked at program or system changes to reduce early-learning failure (Slavin, 1996; Sornson, 2001; Tucker, 2001). Initiatives involving class size for early elementary programs, the use of multi-aged classrooms, and the use of soundfield-enhancement systems have been tried with considerable success in many cases (Currie & Duncan, 1995; Flexer, 2001; Kline, 1988). Quality preschool experiences, motor development programs, and parent training programs also have evidenced success (Haskins, 1989; Johnson, 2001; Pfannenstiel, 1989). Other specific program designs include Reading Recovery (Clay, 1993; Slavin, 1996), Success for All (Slavin, 1996), and instructional-support teams (ISTs) (Hartman & Fay, 1996). In this research, I examined the effect of early-intervention/prevention services in the Northville Public Schools, which uses an IST concept as the basis of its prevention and early-intervention services.

Instructional support is a concept rather than a model (Kovaleski, Gickling, Morrow, & Swank, 1999; Kovaleski, Tucker, & Duffy, 1995; Kovaleski, Tucker, & Stevens, 1996). As such, the application of instructional support in Northville may look

different from other applications of the same concept in other school districts. In Northville, there are five elementary schools and the application varies somewhat even among these five related schools. These schools have been practicing the instructional-support concept for varying numbers of years. Silver Springs Elementary had implemented instructional support for 5 years before this study, since 1996-97; Thornton Creek Elementary for 3 years; and Amerman Elementary, Moraine Elementary, and Winchester Elementary had implemented this concept for 2 years. Each school has adapted early-intervention practices and the instructional-support process in slightly different ways. The skill levels and training levels of teachers also may vary. Variance in application of instructional practice and use of the IST model among schools is expected.

Certain things are true at each building site. Individual student referrals to the IST are viewed as requests for assistance in the regular classroom, rather than as automatic requests for children to be moved into special education. The IST processes a request for assistance by brainstorming and then offering classroom-based, follow-up support. Special education teachers, teachers of speech and language, and learning consultants identify instructional support as one of their primary responsibilities. Specific training has been provided at the school-building level in collaborative consultation, instructional assessment, behavior management, and curriculum adaptation. Additional support services are available to help facilitate students' motor skill development, visual memory development, and the development of appropriate behaviors and social skills in each school.

Purpose of the Study

My broad purpose in this study was to determine the impact of Northville Public Schools' early-intervention/prevention services on district costs, special education placements, and student achievement. The study focuses on benefits for both students and teachers. The data represent the most recent information obtainable. When available, longitudinal information regarding student achievement and special education referral and placement before the inception of the IST process was used to provide comparable data. In addition, my creation of a hypothetical school based on standard or statewide data makes additional comparisons possible.

Research Questions

To achieve the above-mentioned purpose, the following research questions were posed to guide the collection of data for this study:

1. Are early intervention and the use of ISTs cost effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel, and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement, improving student behavior, and improving student affect?

Importance of the Study

By studying the impact of early-intervention/prevention services in one school district, I intended to measure effectiveness over a short span of years, and provide objective analysis of success to date so that continued improvement can occur. I hope that this study will provide a learning model for other school districts that are interested in using the instructional-support team concept, especially in light of the strong recommendation for prevention-based approaches to early learning recommended by the President's Commission, appointed to study special education issues (Commission on Excellence in Special Education, 2002).

In this study, I examined the effects of an early-intervention/ prevention program which has been developed in one school district. This program is intended to support teachers in their efforts to cultivate early-learning success for all students; to provide support services through the IST model, both within and outside the regular classroom; to involve parent and student volunteers when appropriate; to use a peer assistance professional development model; and to engage in ongoing school-based improvement. The model examined in this study is described in detail in Appendix A.

Although this is a study of one district and one model, the results can provide important information to any district considering the development of its own early-intervention/prevention model. The results also can provide a rationale for the energy and expense that might be spent on developing similar models in other districts or buildings.

Elements of the Model Studied

Professional development supporting the concept of early intervention began during the 1992/93 school year. Co-teaching, language, and reading support for non-special education identified students, motor skill development, sensory-motor integration, curriculum-based assessment and other skill areas were addressed. In 1995-96, training was offered to one school chosen to be a model for use of the Instructional Support Team concept. Implementation began at Silver Springs Elementary in 1996-97, and throughout the district 3 years later.

By the time of this study, each elementary school had formally used this model for at least 2 full years. There are variations in use of the model (Appendix A).

Basic elements of the IST model are used in each school. These include contracting with the general education teacher to specify the working agreement, identifying the educational concern, determining baseline data, making a specific plan for intervention, intervention, a plan for monitoring intervention, evaluation of progress, and evaluating the need for additional interventions.

Additional elements of the Northville programs include support to general education students in the areas of literacy skills, numeracy, gross-motor skills, fine-motor skills, and visual memory. These supports may be offered in the general education classroom or as pull-out services. Additionally, support is offered to teachers to help them learn to deal with problem behaviors. Parent training is encouraged in each school (Appendix A).

Methodology

Data gathered to address the four research questions were analyzed using a quantitative approach. Cost effectiveness was evaluated by considering all special education expenditures for the district and comparing them to a hypothetical school with state-average levels of special education identification. If the Northville model produced educational results equal to or better than the state-average model for a lower overall cost, it was considered cost effective (Hartman & Fay, 1996).

Reduction in special education placement rates was evaluated by considering Northville's overall special education rates since 1992/93, and by analyzing specific disability categories since 1999/2000. Increases or decreases were compared to state trends.

Perceptions of the effectiveness of the IST processes were assessed by collecting survey data and comments from principals, teachers, and parents. More than 75% *Excellent* or *Good* responses on a 4-option scale, or more than 80% *Strongly Agree* or *Agree* responses on a 5-option scale, were considered strong positive responses. All elementary principals and teachers, and all parents whose children were direct participants during the 2001-02 school year at the time of the survey, were given the opportunity to participate.

Effectiveness in increasing student achievement was evaluated by considering the achievement scores of all third- and fifth-grade students who had received direct instructional support services. Using scores on the Iowa Test of Basic Skills for third-grade students and Michigan Educational Assessment Program (MEAP) reading and mathematics test scores (from Winter 2001) for fifth-grade students, I evaluated the

achievement of these previously identified at-risk students. Iowa achievement test scores ranging from the 30th to 70th percentile or above were considered positive results, as these students would not be considered for special education placement as learning disabled students. MEAP results in the “proficient” range or above were considered positive.

Limitations of the Study

This is a study of one school district and the specific practices and processes it has developed over a relatively short period of time. Before this study began, the schools in this district had been given training opportunities and support for instructional practices which support early intervention since 1992/93 (see Appendix A). Beginning in 1996/97, a pilot implementation of the IST process was started at Silver Springs Elementary. Three years later, in 1999/00, the district moved to full implementation of this process. Two full years of IST use in all elementary schools preceded this study.

Early-intervention practices using the IST model as a base will continue to evolve and improve in this district. Some teachers have embraced this model, and others have resisted change. Efforts to differentiate learning opportunities to better serve the individual needs of children are in the early stages. There is a need for professional development to further refine the supports offered to children both within and outside the regular classroom.

The model investigated in this study is by no means perfect. Rather, it should be viewed as part of the beginning stages in the development of early-intervention services in this school district.

It is difficult to generalize the research results from one district to other school districts. Northville is a growing, suburban, upper-middle-class school district with a reputation for good schools. In many ways, the effort to create a new model for early intervention in this district is unusual because of the general success of the schools. It may be that districts with the perception of greater need will be more eager to pursue early-intervention approaches.

Although Northville uses the IST model as a base for early-intervention services, other unique support services are available (described in Appendix A) that add to the traditional uses of ISTs. Professional development opportunities and openness to change of administrators, teaching staff, and others to change are factors to consider in replicating this study.

History of the Instructional Support Teams in Northville Public Schools

Beginning in 1992/93, specific training was made available to general and special education teachers, designed to encourage early intervention. Teachers were not required to attend, but some awareness of the possibilities of early intervention was introduced. Training was offered that related to language development, motor and sensory skill development, and behavior skill development. The instructional strategies that became commonly understood and used are summarized in Appendix A.

In 1995/96, an initial training on the Instructional Support Team process was offered to staff at one elementary school. Silver Springs Elementary was chosen because it had the highest rate of special education placement among the elementary programs, and because Title I funds were available to this building. It was hoped that the IST model

would help further improve early-intervention practices and help create clear procedures that support early intervention. In 1996-97, the first year of implementation, an IST position was established, that role was defined, and a plan for referral became part of the school improvement plan. Since then, refinement of the plan has continued through modifying paperwork, fine-tuning the record-keeping system, tracking student progress, and implementing the support-partners concept.

Thornton Creek Elementary began ISTs in 1998-99, and the remaining elementary schools instituted ISTs the following year. All principals report that the emphasis has been on a continuing process of review and improvement. At Amerman, the process continues to change as record keeping, data collection, and professional development evolve. The staff at Moraine are currently focused on collecting data, both baseline and at intervals, in order to determine which strategies are most successful. Involvement of classroom teachers at Thornton Creek has grown over the last 2 years, and the team has refined its process. Since the program's inception, Winchester's staff has added a variety of components to the process, including IST folders, referrals, data collection, co-teaching, a skill builders program, drop-in support, weekly IST meetings, and professional development opportunities.

District population has increased during the 1992 to 2002 years discussed in this study. This growth does not reflect a significant change in demographics, however, as the district continues to serve mostly White middle- and upper-middle-class families.

Assumptions

Children referred to the Instructional Support Team are assumed to be struggling with some aspect of success in the regular classroom.

On the Iowa Test of Basic Skills, student achievement, post-IST intervention, in the 30th to 70th percentile or above was considered a positive result, since these students are assumed to be functioning in the average range with the ability to succeed in the regular class, and not considered as needing special education.

On the MEAP test, post-IST intervention, students who scored in the “proficient” range are assumed to have the skills to achieve success in the regular class.

It is assumed that successful placement in a general education class, without becoming eligible (through low achievement) for special education programming, is a more desirable outcome than special education placement.

Lower levels of special education cost, with equal or better educational results as measured by the number of children needing special education services, was the criterion used to assess cost effectiveness. It is assumed that lower levels of special education placement indicate improved student performance within the general education classrooms.

Definition of Terms

The following terms are defined in the context in which they are used in this dissertation.

Autistic impaired (AI): A neurological disorder which interferes with reasoning, social interaction, and speech development.

Early intervention: In this study, early intervention refers to the efforts made to support learning success before placement in special education programs. Because this study is considering the effectiveness of an elementary model, most early-intervention efforts referenced here will describe K-5 grade level efforts.

Emotionally impaired (EI): Students exhibit significant behavior issues over an extended period of time that negatively affect their academic performance, and have trouble with self-control and are frequently disruptive.

Educable mentally impaired (EMI): Students identified as Educable Mentally Impaired have a moderate mental impairment and learn at a slower rate.

Hearing impaired (HI): Students who are hearing impaired have a hearing loss which interferes with development and their educational performance in a regular classroom setting.

Instructional support team (IST): A system of collaborative problem solving and support for classroom teachers.

Learning disabled (LD): Students have a severe discrepancy between their intellectual ability and their academic achievement.

Michigan Educational Assessment Program (MEAP): A standardized test that is given to public school children throughout the state.

Physically or otherwise health impaired (POHI): Students identified as POHI have a physical challenge which affects their ability to learn.

Severely mentally impaired (SMI): Students identified as SMI have a severe mental impairment.

Speech impaired (SLI): Students have communication disorders which affect their educational performance such as stuttering or voice impairment.

Support services: Professional support to students beyond that available through the regular classroom instructor. These services may involve speech teachers, social workers, teacher consultants, special education teachers, teacher assistants, and other staff.

Trainable mentally impaired (TMI): Students identified as Trainable Mentally Impaired have a significant mental impairment.

Visually impaired (VI): Students have a visual impairment which, even when corrected, negatively affects their learning.

Summary

Rates of identified learning disabled students continue to grow, and many young children are perceived by their teachers as not being fully ready to succeed in school (Maryland Department of Education, 2001). This study was undertaken to examine the results of one school district's efforts to provide early-intervention services. Cost effectiveness; special education rates; perceptions of principals, teachers, and parents; and the achievement of students receiving early intervention were examined.

CHAPTER TWO

REVIEW OF LITERATURE

The rationale for preventing early learning failure is compelling. In the past two decades, studies have underscored the importance of early learning success in the lives of young students. Reading disabilities affect 20% to 30% of school-aged children, or at least 15 million children. Although these disabilities occur in varying degrees of severity, the enormity of the problem is striking. Twenty to 30% of school-aged children have reading difficulties that are severe enough to hinder their performance in school (Lyon, 1995, 1997, 1998). Without significant changes to the present educational and diagnostic systems, the number will continue to rise (Capute, Accardo, & Shapiro, 1994; Duane & Gray, 1991; Lyon, 1994, 1995, 1997).

Researchers have found that failure in the early grades is highly related to failure in later schooling. A study by the International Reading Association (Allington & McGill-Franzen, 1996) indicated that intense appropriate instruction in the area of difficulty (e.g., listening, speaking, and so on) should take place before concluding that special education placement is necessary. The Council for Exceptional Children (1997) also reported this position. The national Parent-Teacher Association (PTA) concurred, stating that schools should prepare at-risk students through early intervention, rather than relying on retention or social promotion (Tuscano, 1999). Further, in a 1999 report on social

promotion, the American Federation of Teachers called for early intervention as the most cost-effective remedial program (Tuscano, 1999).

Phonological awareness is a good predictor of reading and writing disabilities in kindergarten and first grade (Lyon, 1994, 1995; Shaywitz, 1996; Shaywitz, Fletcher, & Shaywitz, 1995; Torgesen, 1995; Torgesen & Wagner, 1998). It is also thought that a discrepancy between intelligence quotient (IQ) and achievement is an invalid method of identifying individuals with learning disabilities (Aaron, 1997; Fletcher et al., 1998; Shaywitz, 1996). Further, it is known that the ability to read and write depends on the automatic recognition and spelling of single words. Fluent readers and writers accurately and automatically identify words (Berninger, 1998, 1999; Graham, 1999; Shaywitz, 1996). Best practice for students with early reading difficulties involves a balanced program of basic skills and meaningful activities presented at the appropriate instructional level for each student (Adams, 1990; Adams & Bruck, 1995; Berninger, 1998, 1999; Graham, 1999, Honig, 1996; Lyon, 1997; Gickling & Armstrong, 1978). Effective reading instruction includes a balance of instructional methods.

Kindergarten or first grade is the time of greatest opportunity for preventing early learning failure and preparing a path to success (Fletcher et al., 1998; Lyon, 1997, 1998; Richardson, 1994; Torgesen, 1998; Torgesen, Wagner, Rashotte, Alexander, & Conway, 1997; Vellutino et al., 1996; Vellutino, Scanlon, & Tanzman, 1998). The impact of early intervention on early learning success was especially emphasized in research from the Carolina Abecedarian Project (University of North Carolina at Chapel Hill), the High/Scope Perry Preschool Project (High/Scope Foundation, Ypsilanti, Michigan), and

the Parents as Teachers Program (Parents as Teachers National Center, St. Louis, Missouri). These programs emphasized the potential benefits of intervening with families of preschool-aged pupils to help parents learn to enhance their children's language development, motor development, and parenting-skill development in the home (Alexander & Entwisle, 1988; Barnett, 1996; Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; Campbell & Ramey, 1999; Coleman, Rowland, & Hutchins, 1997; Currie & Duncan, 1995; Drazen & Haust, 1996; Entwisle & Alexander, 1989; Pfannenstiel, 1989; Stevenson & Newman, 1986; Wheeler, 1994).

The effects of early intervention include short-term benefits for children as measured by IQ and sizable long-term positive effects on school achievement, grade retention, special education placement, and social adjustment. Results vary because of differences in quality among programs (Barnett, 1996; Caughy, DiPietro, & Strobino, 1994; Consortium for Longitudinal Studies, 1983; Copple et al., 1987; Haskins, 1989; Husen, & Tuinman, 1991; Jester & Guinagh, 1983; Locurto, 1991; McKey et al., 1985; Nieman & Gaithright, 1981; Olds & Kitzman, 1993; Phillips, McCartney, & Scarr, 1987; Seitz, 1990; Sprigle & Schaefer, 1985; Wasik, Ramey, Bryant, & Sparling, 1990; Zaslow, 1991). For example, the Success for All model has been studied widely across the country (Slavin, 1996; Sornson et al., 2001) with significant success in some sites and less in others. Implementation of the Instructional Support model was studied in different sites to determine program integrity and effectiveness (Kovaleski, Gickling, Morrow, & Swank, 1999). Using independent observers, students were studied to determine time on-task, assignment completion rates, and comprehension. Variation in effectiveness ratings

and program integrity was noted. The success of any model will vary based on the skill and preparation of individual teachers.

In December 2000, the Center for Adolescent Health at the University of Minnesota released a significant study entitled *Protecting Teens: Beyond Race, Income and Family Structure* (Blum, Beuhring, & Rinehart, 2000), which summarized the factors, events, and experiences related to risky behaviors that apply across gender and ethnic groups. In this study, four factors were found to be related to the prediction of risky behaviors in all adolescent and teen subgroups. These were: (a) problems with schoolwork; (b) unsupervised time hanging out with friends; (c) friends' drinking behavior; (d) and the absence of a positive parent/family relationship. In the summary of this study, school failure was described as a public health problem. Failure to intervene effectively in children's early school years is costly to the youngsters themselves, their families, and society as a whole.

Early intervention can help avoid the later need for more expensive special education services (Fletcher et al., 1998; Lyon, 1997, 1998; Richardson, 1994; Torgesen, 1998; Torgesen et al., 1997; Vellutino et al., 1996; Vellutino, Scanlon, & Tanzman, 1998). The cost of educating each child who experiences so much early learning failure that he or she must be placed in a classroom-based special education program more than doubles for the remaining years of his or her school career. This additional cost can range from \$50,000 to \$75,000 (conservatively estimated) for each student who is placed in a special education program. The population of learning disabled students, in particular, is increasing at a disturbing rate in Michigan and around the country (see

Table 1 and Figures 1 and 2). In Michigan, approximately 50% of all special education students are labeled learning disabled (Michigan Department of Education, 2001). This category has experienced the greatest growth over the past 25 years, and is primarily responsible for the increases in cost for special education programs. In 1999, the Michigan Association of Intermediate School Administrators (MAISA) estimated the cost increases at approximately 9% per year (Michigan Association of Intermediate School Administrators, 1999). This rate of increase causes great concern for both educators and legislators.

Early reading failure is associated with a variety of serious problems. Many students with poor reading skills suffer low self-esteem, break school rules, and are unlikely to graduate from high school (Juel, 1996). Illiterate adults account for 75% of the unemployed, 33% of mothers receiving aid to families with dependent children, and 60% of prison inmates (Adams, 1991). Early reading failure is associated with adult illiteracy (Lyon, 1996; Torgeson, 1998; Riley, 1996). For people with disabilities, estimates of illiteracy range as high as 73% (Riley, 1996).

The real cost of allowing young students to experience failure when failure could have been prevented is not just to the schools, but to society as a whole. Costs related to violence, school attrition, early pregnancy, delinquency, substance abuse, and low educational attainment create long-term issues for society (Blum, Beuhring, & Rinehart, 2000; Commission on Excellence in Special Education, 2002; Currie & Duncan, 1995).

The Abecedarian project (Ramey & Ramey, 1998) was a carefully controlled long-term study of the benefits of early childhood education for poor children. Children in the

study received full-time, high-quality intervention from infancy through age 5. Each child received an individualized program focusing on social, emotional, cognitive, and especially language development. Progress was monitored at ages 12, 15, and 21. In comparison to their counterparts who were not part of the study, children who participated had higher cognitive test scores (sustained through age 21) and better academic achievement, completed more years of education, were more likely to go to a 4-year college, were older when their first child was born, and showed enhanced language skills (Ramey & Ramey, 1998).

Several models have been demonstrated to reduce early learning failure and effectively reduce the rates of special education referral and placement (Kovaleski, Tucker, & Stevens, 1996; Pikulski, 1994; Slavin, 1996; Sornson et al., 2001). Models including Success for All, Reading Recovery, and the use of ISTs have been found to help students achieve and reduce the need for special education supports and services. Although there is no one and only way to prevent early learning failure, there is, nonetheless, a body of research on effective instructional techniques for young students (Allington & Cunningham, 2001; Allington & Walmsley, 1995; Clay, 1993; Cunningham & Allington, 1998; Ellis & Fouts, 1997; Gickling & Armstrong, 1978; Gickling & Rosenfield, 1995; Jensen, 1998; Kline, 1988; Lowery, 1998; National Research Council, 1998; Sornson et al., 2001; Van de Walle, 1998).

The need for quality early identification and intervention services is apparent, and seems to be growing. In 2001, the Maryland Department of Education published a study entitled *Children Entering School Ready to Learn*. The Work Sampling System was used

to assess 23,000 kindergarten students across the state. The study indicated that only 40.1% of the children were fully ready for kindergarten; 50.3% were rated as needing targeted support, and 9.6% needed considerable support (Maryland Department of Education, 2001).

Poor performance in kindergarten and first grade may imperil children, decreasing the likelihood of positive social exchange and peer support, and lowering expectations of performance (Entwisle, 1995). Children who repeat a grade are at greater risk of specific behavioral disorders, including attention deficit hyperactivity disorder (ADHD), obsessive-compulsive disorder, and major depressive disorder (Velez, Johnson, & Cohen, 1989).

Late birthday, poor visual-motor integration, low maternal education, and a positive family history of learning problems have been associated with early learning failure (Fowler & Cross, 1986). Similarly, ineffective parenting, identified by low warmth and structuring during the preschool years, predicted shy behavior and low academic achievement in kindergarten (Cowan et al., 1994).

In contrast, secure attachment in infancy is associated with higher IQ scores in kindergarten (Van Ijzendoorn & Van Vliet-Vissers, 1988). Positive relationships with teachers in the early grades are associated with better-than-expected outcomes for both at-risk and nonrisk samples (Garmezy, 1994; Pederson, Fancher, & Eaton, 1978; Werner & Smith, 1980).

The importance of early learning success has already been noted. The findings from the studies reviewed above underscore the need to consider strengthening available

supports or improving instructional opportunities for at-risk students. The evidence suggests that to allow large numbers of children to drift below expected levels of performance has many negative consequences.

In 2002, the President's Commission on Excellence in Special Education completed a review of American educational policies that affect special education. The Commission's report, entitled *A New Era: Revitalizing Special Education for Children and Their Families*, detailed nine findings and contained three major recommendations. Findings 2 and 6 are particularly relevant to this study. Finding 2 states,

The current system uses an antiquated model that waits for a child to fail, instead of a model based on prevention and intervention. Too little emphasis is put on prevention, early and accurate identification of learning and behavior problems, and aggressive intervention using research-based approaches. This means students with disabilities don't get help early when that help can be most effective. Special education should be for those who do not respond to strong and appropriate instruction and methods provided in general education. (Commission on Excellence in Special Education, 2002, p. 3)

Finding 6 states, "Many of the current methods of identifying children with disabilities lack validity. As a result, thousands of children are misidentified every year, while many others are not identified early enough or at all" (p. 3).

The Commission's second major recommendation asks educators to embrace a model of prevention, not a model of failure. It states,

The current model guiding special education focuses on waiting for a child to fail, not on early intervention to prevent failure. Reforms must move the system toward early intervention and swift intervention, using scientifically based instruction and teaching methods. This will require changes in the nation's elementary and secondary schools as well as reforms in teacher preparation, recruitment and support. (Commission on Excellence in Special Education, 2002, p.8)

In this study, I looked specifically at the Northville Public Schools' adaptation of an IST model that serves as the basis for prereferral and early intervention efforts. In the first school in Northville to formulate and apply this model, Silver Springs Elementary School, a belief statement was formalized. It states,

We believe in reducing the amount of time a student flounders before appropriate intervention is provided, that the most effective learning occurs in the regular classroom, that effective intervention must include the identification of individual learning styles, that the most powerful interventions are developed collaboratively, that teachers will accept responsibility and ownership for student learning when appropriate support is provided. (Pawlowski, 2001, p. 65)

In this model, peer conferencing, the development of support plans, support for the classroom teacher, and ongoing evaluation of progress and support services in the areas of early reading, early numeracy, motor skill development, language development, behavior skill development, and visual memory are noted (Fay, 2001; Johnson, 2001; Kline, 2001; Pawlowski, 2001; Sornson, 2001). The IST concept was developed in Connecticut and Pennsylvania and has been well documented in the literature (Hartman & Fay, 1996; Kovaleski et al., 1995; Kovaleski et al., 1996; Kovaleski et al., 1999; Tucker, 2001).

CHAPTER THREE

METHODOLOGY

Introduction

My broad purpose in this research was to determine the effects of Northville's early-intervention/prevention services on district costs, special education placements, and student achievement. The following research questions were addressed in this study:

1. Are early intervention and the use of ISTs cost effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel, and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement?

The most recent information available was gathered in this study. Longitudinal information regarding retention, student achievement, and special education referral and placement before the inception of early-intervention efforts and the IST process was used for comparison purposes. In addition, my creation of a hypothetical school, based on standard or statewide data, made additional comparisons possible.

Design of the Research

The four research questions posed in this study were formulated to address the concerns deemed important to any school or district that might consider implementing its own early-intervention design. Data collected to answer the research questions were analyzed using quantitative measures. Additional qualitative data collected from principals, general education teachers, IST personnel, and parents were used in answering Research Question 3.

Cost effectiveness (Research Question 1) was evaluated by considering all special education expenditures for the district and comparing these to a hypothetical school district with state-average levels of special education identification. If early intervention is effective, the number of children needing special education theoretically will be lower, and thus the costs associated with special education placement also will be lower.

Special education costs were determined by analyzing the SE 4096 report for the 2001/02 school year, an annual report to the Michigan Department of Education that details special education costs from the general operating budget. Other costs were considered from the federal IDEA Flowthrough grant for K-12 special education. These two sources represent all Northville Public Schools' K-12 special education expenditures. Funds for center-program students provided by the county's Act 18 budgetary process were not included in this analysis, nor were funds for preschool special education students.

After determining the total Northville cost of K-12 special education, these costs were compared to estimated costs of providing special education services to a

hypothetical district with state-average levels of special education identification. Lower levels of special education cost, with equal or better educational results, as measured by the number of children needing special education services, was the criterion used to assess cost effectiveness (Hartman & Fay, 1996).

Additional supporting data were collected by assessing the cost of early-intervention support services per child served. These support services include time given by the resource room teacher, teacher of speech and language, social worker, psychologist, and learning consultant to the instructional-support process. Time for these services was assessed using an estimate of daily time devoted to this purpose. Although costs for all of these support positions, except the learning consultant, were already accounted for in the assessment of special education costs, this analysis provided annualized costs per student served in special education versus being served by instructional support.

Reduction in special education rates (Research Question 2) was evaluated by considering Northville's overall special education rates in 1992/93, compared to state rates, and observing historic trends since that date. Major special education eligibility categories within Northville were examined for each year going back to 1996/97, when the first Northville IST began at Silver Springs Elementary School in 1996/97. The overall rate of eligibility for special education since that time, with special attention to the learning disability category, was used to assess whether early intervention and the use of ISTs were associated with a reduction in special education identification rates.

Effectiveness of the IST process (Research Question 3) from the perspective of principals, general education teachers, IST personnel, and parents was assessed through a survey. Rather than using a sampling method, I asked all elementary principals, all elementary general education teachers, all IST personnel (including resource-room teachers, speech teachers, social workers, psychologists, and learning consultants), and all parents of students directly involved in the IST process in 2001/02 to complete a survey. Compliance was optional but encouraged. The building principals collected the completed surveys and returned them to me. To eliminate any question of bias, I turned over the results to the Wayne County Regional Education Service Agency consultant, Dr. Fredericka Frost, for tabulation. All surveys, even partially completed ones, were used in analyzing the data.

Effectiveness of the IST process in increasing student achievement, improving student behavior, and improving student affect was evaluated on a 4-option scale (*excellent, good, fair, poor*). A 75% *excellent* or *good* response was considered a strong positive response. Additional questions were posed on a 5-option scale ranging from *strongly agree* to *strongly disagree*. An 80% *strongly agree* or *agree* response was considered a strong positive response.

Effectiveness in increasing student achievement was evaluated by considering the achievement scores of all third- and fifth-graders who had received direct IST services. Although preintervention data were not available, I assumed that these students had been experiencing difficulty in the general classroom and that was the basis for their referral.

Student achievement data were collected in April 2002. For all third-graders who had ever been referred for IST services, results on the Iowa Test of Basic Skills (from Winter 2002) were collected. For all fifth-graders who had ever been referred for IST services, MEAP test results from fourth grade (from Winter 2001) were collected and compared to the general population of Northville students. These were the most recent standardized-test results for these students.

To determine whether students who had received IST services had developed the necessary skills to be successful in the general classroom, the following criteria were used. On the Iowa Test of Basic Skills, student achievement in the 30th to the 70th percentile or above was considered a positive result. Children scoring in this range were deemed likely to have the skills to succeed in a general classroom. On the MEAP test, students who scored in the proficient range or above were deemed to have the skills needed for success in a general classroom.

Data-Collection Instruments

Several types of data-collection instruments were used in this study. Questionnaires pertaining to ISTs were administered to elementary principals, general education teachers, IST personnel, and parents. (Copies of these instruments may be found in Appendix B.)

These instruments were developed using the following process. Cost analysis questions used in the Hartman and Fay (1996) study were reviewed and incorporated into the questionnaires to be used with principals, general education teachers, and IST staff. Additional questions regarding history, effectiveness, curriculum, training needs and

perceived benefits were constructed. All first draft questionnaires were reviewed by IST staff, and modified based on their input. The questionnaires were distributed via the elementary principals to all teaching staff and parents of students receiving IST services. A 2-week response window was used. Principals collected the completed questionnaires. Teachers and parents were encouraged (not required) to respond. All completed questionnaires were returned to me, but then sent to county service agency research consultant Dr. Fredricka Frost for compilation of results, to avoid any researcher bias in the compilation. All surveys, even those partially completed, were included in the results.

Questions on the Principal Questionnaire addressed the following concerns:

1. History of the IST process
2. Time required
3. How well the program works in the areas of (a) entry, (b) hypothesis forming, (c) verifying, and (d) outcome
4. Relative effectiveness of IST in the areas of (a) achievement, (b) behavior, and (c) affect
5. Benefits for students
6. Effects on regular classroom teaching
7. Effects on teacher perceptions
8. Parent involvement
9. Adequacy of curriculum for various groups of students
10. Changes needed in instruction

11. Training needed

12. Perceived appropriateness of student placement

13. Future plans.

The Classroom Teacher Questionnaire contained items pertaining to:

1. Grade level taught
2. Description of involvement with IST
3. How well the program works in the areas of (a) entry, (b) hypothesis forming, (c) verifying, and (d) outcome
4. Relative effectiveness of IST in the areas of (a) achievement, (b) behavior, and (c) affect
5. Benefits for students observed
6. Generalization to other classroom situations
7. Changes in approach to teaching
8. Estimate time required for the IST process
9. Services received from ISC
10. Adequacy of curriculum for various groups of students
11. Changes needed in instruction
12. Training needed
13. Perceived appropriateness of student placement.

The IST Personnel Questionnaire was administered to learning consultants, speech and language therapists, school psychologists, special education teachers, and social workers. In completing this questionnaire, respondents were asked to:

1. Identify personnel involved in the IST process on a daily basis
2. Estimate the time required for each staff member involved
3. Estimate the amount of their time required
4. Indicate activities/services provided
5. Indicate how well the program worked in the areas of (a) entry, (b) hypothesis forming, (c) verifying, and (d) outcome
6. Assess the relative effectiveness of IST in the areas of (a) achievement, (b) behavior, and (c) affect
7. Indicate the adequacy of the curriculum for various groups of students
8. Indicate changes needed in instruction
9. Indicate what training is needed.

The Parent Questionnaire contained questions about:

1. Service received by the child
2. Time involved
3. Strategies included
4. Perceived benefits
5. Outcome
6. Perceived appropriateness of student placement.

In addition to using the above-mentioned questionnaire, the results on the Iowa Test of Basic Skills for all third-grade students who had ever been referred for IST services were collected. Results of the MEAP test (administered in fourth grade) were collected for all fifth-grade students who had ever been referred for IST services.

Further, a data/cost collection sheet was used to record the average salaries for all Northville personnel involved in the IST process, for the years considered in the study. The number of hours worked during those years by each staff member involved also was recorded. The amount spent for special education students during the years considered was estimated at 120% more than student costs for regular education, based on Michigan Departmental Education estimates of additional costs of students in special education. Data were also gathered on projected costs for regular and special education placements and federal grants for special education (K-12).

Procedure

Cost effectiveness of the early-intervention programs was considered by comparing 2001/02 Northville special education costs to a hypothetical district with state-average rates of special education identification. Northville costs included special education costs reported on the 2000/01 special education cost report (Appendix C) and federal IDEA flowthrough grants for 2000/01. Equal or better results, based on need for special education placement, for less cost was considered cost effective.

Reduction in special education identification rates was considered by tracking district total rates and individual category rates since 1992/93, when early-intervention-related professional development began, also noting the introduction and systematization of the IST process. Northville data are based on the unduplicated fall count of K-12 special education students, and state data come from the same source. The viewpoints of principals, general education teachers, IST personnel, and parents were considered by the use of questionnaires. These instruments were developed by reviewing cost analysis

questions used in the Hartman and Fay (1996) research, with additional questions regarding history, effectiveness, curriculum, training needs, and perceived benefits. The draft questionnaires were reviewed by IST staff and revised. Questionnaires were distributed in mid-February, 2002, with a 2-week return window. Principals distributed the survey instruments to teachers and parents, and encouraged them to respond. Principals then collected responses, returned them to me, and they were delivered to a county consultant for compilation to avoid any researcher bias in the compilation of results. All returned survey responses were tabulated, including those from partially completed surveys.

Student achievement was considered by collecting achievement tests scores available for all third- and fifth-grade students. Third-grade students took the Iowa Test of Basic Skills in January 2002. These test results for all third-grade students who had received service through the IST process were compared to national norms. Fifth-grade students had taken the MEAP (Michigan Educational Achievement Profile) as fourth-grade students in February 2001. These were the most recent data available for these students in reading and mathematics. Scores of all fifth-grade students who had received support services through the IST process were compared to Northville district norms, noting that Northville is one of the highest-achieving districts in the state.

Summary

Four research questions were posed to determine the effects of Northville's early-intervention/prevention services or district costs, special education placements, and student achievement.

These are:

1. Are early intervention and the use of ISTs cost effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement?

CHAPTER FOUR

RESULTS

Introduction

My broad purpose in this study was to determine the effects of Northville Public Schools' early-intervention/prevention services on district costs, special education placements, and student achievement. To accomplish this purpose, the following four research questions were addressed:

1. Are early intervention and the use of ISTs cost effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel, and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement?

In the next section, quantitative data generated by responses to the questionnaires are presented, to answer the research questions. The second part of the Results section contains qualitative data in the form of principals', teachers', and parents' open-ended comments in response to items on the questionnaires along with a summary of the themes presented in the comments. An analysis of these responses is included as a part of chapter 5.

Results

In this section, each research question is restated, followed by the results pertaining to that question.

Research Question 1: Are Early Intervention and the Use of the IST Cost-Effective?

As a prereferral system, the IST is designed to achieve two goals: provide a (a) more appropriate educational program at a (b) lower cost than traditional special education. This analysis is intended to determine whether one program or approach is better than another by finding whether it achieves equivalent or better results than the alternative(s) for less cost.

The question addressed in this study concerns whether the IST process (see Appendix A) provides an appropriate education for students by making modifications in the regular classroom approach and by providing support services for any student demonstrating need, thereby reducing special education referrals and placements. For the purposes of this study, it is assumed that students who are able to remain successfully in the regular classroom are better served than if they are placed in the special education program.

Cost Measures

Cost measures were developed for the IST and the traditional approach to special education placement by determining the quantity and cost of resources required. The primary resources are represented by the time required for various personnel to carry out their responsibilities during each phase of the IST process (Appendix A). It is assumed

that other nonpersonnel costs, such as travel or supplies, were insignificant; therefore, they were not included in the analysis.

Northville special education costs for 2000 – 01 were comprised of \$2,532,952 from general operating funds, as described on the SE 4096 annual report, plus \$238,824 in federal flow-through funds, for a total of \$2,771,776 (Appendix C). Northville costs reflect 6.6% of K-12 students receiving special education services. This compares to 13.3% for the average Michigan school district (Michigan Department of Education, 2002). Costs and comparative savings are summarized in Figure 3.

In this figure, the cost of Northville's actual 2001/02 identification rate (6.6%) is compared with projected costs that would be incurred if the identification rate reached the average for Michigan (13.3%) or the nation (11%). As illustrated, Northville's identification rate is less than half of the statewide rate, resulting in an estimated savings of almost \$3 million per year for the district. In comparison with the national average

Figure 3. Comparison of actual Northville costs to projected costs based on Michigan and national special education identification rates.

Note. Michigan and national data from written response to inquiry from Michigan Department of Education, March, 2002.

identification rate, savings are estimated at almost \$2 million per year. Savings are largely attributed to Northville's early-intervention efforts since this is the only noted variable which makes this district different from other districts during this time period.

Staff Involvement Survey

Additional data were collected regarding the cost of service through the IST model (see Appendix C). Although the costs of all IST personnel (except learning consultants) are already reported in the special education cost report, these additional figures provide an estimate of the time and relative cost devoted to instructional support. Early-intervention efforts (Appendix A) by these personnel have a critical impact on overall cost savings and improved student success.

Results from 26 IST personnel regarding the time they spent on the IST process daily are shown in Table 3. Their responses were used to calculate an average amount of time involved in the process. A description of the principals' role in the IST process appears in Appendix B.

Table 3

Amount of Time Principals Spent on the IST Process Each Day (N=26)

Time Spent	Percentage of IST Personnel
Less than 1/4 hour	8.0
More than 1/4 up to 1/2 hour	8.0
More than 1/2 up to 3/4 hour	4.0
More than 3/4 up to 1 hour	0.0
More than 1 up to 2 hours	20.0
More than 2 hours up to 4 hours	44.0
More than 4 hours	16.0

Cost Estimates

Estimated costs of the IST process are shown in Table 4. Principals' and classroom teachers' participation in the IST process was not included because their time is a "sunk" cost that is budgeted separately. IST teacher, social worker, and psychologist times were calculated by taking the upper bound of the time categories less than an hour (e.g., more than 1/2 up to 3/4 hour) and the midpoint of those time categories representing at least an hour per day (e.g., more than 1 up to 2 hours). Cost equivalents were then calculated based on average Northville Public Schools' salaries as of January 2002.

The districtwide average cost per student served was estimated at \$2,132 per child. This compares to \$8,177 if the child was retained or \$9,812 in excess of regular education costs if the child was served in special education classes.

Table 4

Estimated Costs of the IST Process, 2001/02

Staff	Average Salary	Hours in IST/ Year	Cost Equivalent
IST personnel			
Teachers	\$55,127	5,041	\$214,591
Social workers	\$61,459	2,266	\$107,541
Psychologists	\$64,218	555	\$ 27,522
Total		7,862	\$349,654
School average		1,572	\$ 69,931
Total estimated IST cost			
District			\$349,654
School average			\$ 69,931
Avg. IST cost per child served			\$ 2,132

Typically, a Michigan child is identified for special education as learning disabled in fourth grade and remains in the program for 9 years. Hence, the excess cost amounts to \$88,308 over the student's school career. This is an estimate of average additional costs per child who is placed in special education.

Overall, the results indicate that the cost of the IST approach to serving a struggling student within the regular classroom is approximately 22% of the cost of serving that child in special education for just 1 year. These results are summarized in Table 5.

TABLE 5

Comparison of IST Cost, Retention, and Special Education Costs, Per Child Served

Program	Costs
Average annual IST cost per child served	\$ 2,132 ^a
Cost of retention per student	\$ 8,177 ^b
Special education cost in excess of classroom instruction Per year (120%)	\$ 9,812 ^b
Special education costs over 9 years ^c	\$88,308 ^b

^aBased on 164 students, the total in 2000/01.

^bBased on 2000/01 cost figures.

^cThe expected services to a student identified in fourth grade.

It should be noted that services provided through the IST to a student may in some cases continue for more than a year. No data were collected to indicate what percentage of students receive IST services for 1 year only. However, this analysis does indicate that, when considering possible early intervention services for a student, IST services are less costly than retention or eventual placement in special education.

Research Question 2: Are Early Intervention and Use of ISTs Associated With a Reduction in Special Education Identification Rates?

In 1992/93, Northville's special education identification rate was 10.2%, compared to Michigan's rate of 10.8%. Beginning efforts toward early identification and intervention had not yet begun. Staff training on methods of instruction consistent with early reading success, motor skill development, and managing behavior in the classroom was presented between 1993 and 1996. A decrease of special education identification was noted. The first formal use of an IST began at Silver Springs Elementary School in 1996/97. Training continued, as the instructional practices described in Appendix A were more widely used.

Specific data regarding Northville's individual special education eligibility categories are not available before 1996/97. Trend analysis is possible by comparing available data describing the total district special education rates with state rates (Table 6) and by comparing district learning disability rates with state rates (Table 7).

Figures 4 through 8 illustrate Northville Public Schools' 6-year trends in identification rates across special education categories, including learning disabled (Figure 4), speech (Figure 5), emotionally impaired (Figure 6), educable mentally impaired (Figure 7), and a combination of the remaining categories (Figure 8), including trainable mentally impaired, hearing impaired, physical or otherwise health impaired, autistic impaired, and visually impaired.

A consistent trend of decreasing rates of identification was most clearly evident in the learning disabled category. In this category, identification rates declined from 3.9% in 1996/97 to 2.37% in 2001/02. Rates of emotionally impaired identification decreased

slightly, from 0.38% to 0.33%, as did educable mentally impaired rates, from 0.28% to 0.24%.

Table 6

Comparison of Michigan Total Special Education Identification Rates to Northville Public School Rates, 1990-91 to 2001-02

Year	Michigan	Northville
1990-91	10.5	Data not available
1991-92	10.5	Data not available
1992-93 *	10.8	10.2
1993-94	11.0	9.9
1994-95	11.0	9.0
1995-96	11.6	8.8
1996-97 **	11.9	8.5
1997-98	12.2	8.5
1998-99	12.5	8.0
1999-00 ***	12.8	7.0
2000-01	13.3	6.7
2001-02	13.6	6.6

* Early Intervention training begins.

** IST Pilot at Silver Springs Elementary begins.

*** Full elementary implementation of IST process begins.

Note. Northville data are based on unduplicated fall count, including all resident K-12 students. Michigan data are from "Twenty-six Years of Special Education in Michigan," Michigan Department of Education, written response to inquiry. May, 2003.

Northville's special education identification rates for the 3 years preceding this study are shown in Table 6. Across categories, Northville's rates were clearly lower than those of the state as a whole. The 2001/02 overall special education identification rate in Northville was 49.6% of the statewide rate in 2000, the latest year for which these figures were available.

Table 7

Comparison of Michigan Identification Rates of Learning Disabled Students to Northville Public School Rates, 1990-91 to 2001-02

Year	Michigan Learning Disabled Rate	Northville
1990-91	4.47	Data not available
1991-92	4.60	Data not available
1992-93 *	4.71	Data not available
1993-94	4.83	Data not available
1994-95	4.91	Data not available
1995-96	4.98	Data not available
1996-97 **	5.11	3.92
1997-98	5.25	3.58
1998-99	5.38	2.92
1999-00 ***	5.50	2.63
2000-01	5.55	2.36
2001-02	5.60	2.37

* Early Intervention training begins.

** IST Pilot at Silver Springs Elementary begins.

*** Full elementary implementation of IST process begins.

Note. Northville data are based on unduplicated fall count, including all resident K-12 students. Michigan data are from "Twenty-six Years of Special Education in Michigan," Michigan Department of Education, written response to inquiry. May, 2003.

Figure 4. Learning disabled identification rates, by number and percentage, 1996/97 to 2001/02.

Figure 5. Speech identification rates, by number and percentage, 1996/97 to 2001/02.

Figure 6. Emotionally impaired identification rates, by number and percentage, 1996/97 to 2001/02.

Figure 7. Educable mentally impaired identification rates, by number and percentage, 1996/97 to 2001/02.

Figure 8: Identification rates for other categories of special education, including trainable mentally impaired, hearing impaired, physical or other health impaired, autistic impaired, visually impaired, by number and percentage, 1996/97 to 2001/02.

Figures 4 to 8 show the changes in population of various special education categories since 1996/97, the first year of formal instructional support at Silver Springs Elementary School. Since then, all elementary schools in the district have begun to formally use the IST early-intervention model.

In this growing district both the number of learning disabled (LD) students and percentage of LD students have declined. In 1996-97 the district had identified 3.92% of students as learning disabled. This had been reduced to 2.37% in 2001-02. Relatively stable percentages in the other categories are noted.

Northville's special education identification rates have traditionally been below state levels, and have decreased in recent years. For example, in comparison to the 1992/93 state rate of 10.8%, Northville's was 10.2%.

Table 8 contains the last 3 years of Northville special education identification rates in comparison to rates statewide. Across categories, Northville's rates remain below those of the state with the 2001/2002 overall special education identification rate in

Northville only 49.6% of the statewide rate in 2000. In 1992/93 Northville was 0.6% below state average special education identification levels. In 2001/02 it was 6.6%, below state average 13.3% special education identification levels.

Table 8

Identification Rates in Northville Public Schools in Comparison to Statewide Special Education (in percentages)

Category	Northville Public Schools			State 2000 ^b
	1999/00	2000/01	2001/02	
Learning disabled	2.6	2.4	2.4	5.6
Speech	2.8	2.8	2.7	3.2
Emotionally impaired	0.3	0.3	0.3	1.0
Educable mentally impaired	0.2	0.2	0.2	1.1
Other categories ^a	1.1	1.0	1.0	2.4
Total special education	7.0	6.7	6.6	13.3

^aIncludes trainable mentally impaired, hearing impaired, physically or otherwise impaired, autistic impaired, visually impaired, severely mentally impaired, and severely multiply impaired.

^bLatest figures available, Michigan Department of Education, 2002, based on 2002 data.

Research Question 3: Are Early Intervention and the Use of ISTs Effective From the Viewpoints of Principals, General Education Teachers, IST Personnel, and Parents?

Perceptions of School Personnel

Surveys were administered to principals, classroom teachers, IST personnel, and parents regarding the effectiveness of the IST process. Table 9 contains responses by school personnel concerning the effectiveness of the IST in increasing student achievement and improving student behavior and affect. IST staff and principals were generally in agreement regarding the IST's effectiveness in increasing student

achievement; almost all of them agreed that the process was excellent or good.

Classroom teachers tended to be less positive, although more than 70% of them rated the process favorably. Specific concerns were expressed. These will be further explained in this chapter.

Of the three groups, principals were the most positive with regard to the improvement in student behavior; 100% agreed that the IST results were excellent or good. Approximately 88% of IST staff but only about 57% of classroom teachers rated the IST results in this area as excellent or good.

A similar pattern emerged with regard to the improvement of student affect. All of the principals rated the IST results as excellent or good, about 96% of IST staff agreed, and 70% of classroom teachers concurred.

Based on a standard that defines a strong positive response as 75% or more excellent or good responses, principals and IST personnel gave a strong positive response to the IST's effectiveness in increasing student achievement and improving student affect. Classroom teacher ratings were just below the strong positive response level. With regard to the IST's effectiveness in improving student behavior, IST staff and principals gave a strong positive assessment, but classroom teachers did not.

The relative comparison of principal and classroom teacher perceptions regarding the IST process is continued in Table 10. Discrepancies can be noted between the percentage of principals' and teachers' *strongly agree* and *agree* ratings on particular items. For example, whereas 60% of principals strongly agreed or agreed that the school's curriculum was appropriate for all students, 42.4% of teachers agreed or strongly agreed.

Table 9

Principal, Classroom Teacher, and IST Personnel Reports of IST Effectiveness (in percentages)

Item	Principals (<i>n</i> = 5)				Teachers (<i>n</i> = 72)				IST Personnel (<i>n</i> = 22)			
	Excellent.	Good	Fair	Poor	Excellent.	Good	Fair	Poor	Excellent.	Good	Fair	Poor
How effective is the IST process in increasing student achievement?	40.0	60.0	0.0	0.0	22.2	49.2	15.9	12.7	38.5	53.8	7.7	0.0
How effective is the IST process in improving student behavior?	40.0	60.0	0.0	0.0	17.5	39.7	25.4	17.5	11.5	76.9	11.5	0.0
How effective is the IST process in improving student affect?	20.0	80.0	0.0	0.0	18.3	51.7	13.3	16.7	19.2	76.9	3.8	0.0

Table 10

Principals' and Classroom Teachers' Reports of IST Program Benefits (in percentages)

Item	Principals					Classroom Teachers				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The school's curriculum is appropriate for all students.	20.0	40.0	0.0	20.0	20.0	0.0	39.4	28.8	21.2	7.6
Changes are needed in classroom instructional strategies in order to meet the needs of all students.	40.0	60.0	0.0	0.0	0.0	29.7	48.4	17.2	3.1	1.6
Teachers need additional professional development in order to meet the needs of all students.	80.0	20.0	0.0	0.0	0.0	24.2	54.5	15.2	6.1	0.0
As a result of the IST, I/teachers increasingly believe they can impact student achievement in the classroom.	40.0	40.0	20.0	0.0	0.0	7.6	47.0	21.2	12.1	12.1
The IST has resulted in greater parent involvement with the school.	40.0	20.0	20.0	20.0	20.0	10.8	29.2	53.8	6.2	0.0
The IST has resulted in greater parent knowledge of how to work with their child at home.	20.0	60.0	0.0	20.0	0.0	9.4	39.1	40.6	3.1	7.8
Principals' perceptions only: Regular classroom teaching has improved as a result of the IST process.	40.0	60.0	0.0	0.0	0.0					
Placement results in success for students.	20.0	40.0	20.0	0.0	0.0					

Similarly, 60% of principals strongly agreed or agreed that the IST had resulted in greater parent involvement with the school, whereas only 40% of teachers responded in this manner.

Classroom teachers provided additional information regarding their perceptions of the effectiveness of the IST process, as shown in Table 11. Teachers were most positive regarding the desirability of the IST process continuing (Item 11, 81.0% strongly agree/agree) and the helpfulness of IST recommendations (Item 2, 79.7% strongly agree/agree). Conversely, teachers indicated that they had some concerns about or were neutral with regard to the helpfulness of co-teaching and the development of new skills that could be applied to all children in their classroom.

Table 12 contains principals' perceptions of the effectiveness of each phase of the IST process. All five principals gave each phase an excellent or good rating. In addition, principals reported the following IST benefits for students: improved reading, improved behavior, better self-esteem, a shift from a deficit model to building on strengths, instructional plans based on what is known about learning, a higher level of student engagement, a higher level of student motivation, early intervention focused on student learning, good parent support, and all-staff involvement. Open-ended comments from principals, classroom teachers, and IST personnel regarding IST effectiveness appear in the next major section of this chapter.

Table 11

Classroom Teachers' Reports of IST Effectiveness (in percentages)

Item	Response				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I have a good understanding of the instructional support process at my school.	23.5	47.1	10.3	11.8	7.4
2. The recommendations of the IST meetings are helpful to me as a teacher.	42.4	37.3	13.6	5.1	1.7
3. The recommendations of the IST meetings are helpful to the child.	32.8	47.5	11.0	3.3	1.6
4. The goals/recommendations made at the IST meeting are completed in a timely fashion.	30.3	31.0	12.1	12.1	10.6
5. The amount of paperwork involved is manageable.	25.4	38.8	17.9	7	13.4
6. The children make progress as a result of the intervention plans developed at the IST meeting.	22.2	49.2	23.8	1.6	3.2
7. As a result of the IST process, I have developed new skills that I can apply to all children in my classroom.	7.6	47.0	21.2	12.1	12.1
8. Students are successful as a result of the IST process.	11.9	57.6	16.9	5.1	8.5
9. Co-teaching with members of the IST has been helpful to me as a teacher.	19.7	42.6	21.3	6.6	9.8
10. Co-teaching with members of the IST has been helpful to students in my classroom.	21.3	41.0	28	11	8.2
11. I feel that the IST process at my school should continue.	45.8	39.0	1.7	5.1	8.5

Parent Perceptions

All parents whose children were receiving direct IST services in October 2001 were invited to complete the survey. Eighty-one parents responded. Table 13 contains a distribution of these parents according to their children's grade and the school they

attended. As seen in the table, the largest proportion of parents were from Thornton Creek and Amerman Elementary Schools.

Table 12

Principals' Perceptions of IST Effectiveness (n=5)

Indicate how well the IST process is working in each of the following phases:	Response			
	Excellent	Good	Fair	Poor
Referral and contracting	20.0	80.0	0.0	0.0
Problem identification	20.0	80.0	0.0	0.0
Strategy development	40.0	60.0	0.0	0.0
Implementation	20.0	80.0	0.0	0.0
Evaluation/review	20.0	80.0	0.0	0.0

Table 13

Distribution of Parents Responding to the Survey, by Their Children's School and Grade (in percentage)

School	% of Respondents	Grade					
		K	1	2	3	4	5
Amerman	33.8	3.8	19.2	38.5	30.8	7.7	0.0
Moraine	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Silver Springs	18.2	7.7	23.1	0.0	38.5	15.4	15.4
Thornton Creek	39.4	30.0	26.7	30.0	6.7	6.7	0.0
Winchester	9.1	20.0	40.0	0.0	0.0	20.0	20.0

Table 14 shows parents' ratings of the effectiveness of the IST program. Parents were most positive with regard to working at home with their child, with almost 99% giving strongly agree or agree responses. Overall, parents were highly positive regarding all three items measuring IST program effectiveness. Parents' open-ended comments appear in the last section of this chapter.

Table 14

Parents' Ratings of IST Program Effectiveness

Item	Response				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I feel that I have an important role to play in the IST process.	51.9	37.7	10.4	0.0	0.0
2. As a result of the IST process, I learned new strategies to help my child.	40.0	41.3	13.3	4.0	1.3
3. I work at home with my child to supplement the education he/she receives at school.	75.0	23.7	1.3	0.0	0.0

Research Question 4: Are Early Intervention and the Use of ISTs Effective in Increasing Student Achievement?

A crucial component of the evaluation of the IST process pertains to the achievement of children served. Do they thrive in the regular classroom? In addressing this question, I examined third-grade students' results on the Iowa Test of Basic Skills and MEAP reading and mathematics scores for fifth-grade students who took the tests in Winter 2001, when they were still in fourth grade.

Every student who had been through the formal IST process and was presently in third or fifth grade was included in the sample.

Individual students' percentile ranks on the Iowa Test of Basic Skills were converted to scale scores, averaged, and reconverted to percentile ranks, as illustrated in Table 15. Overall, IST third-grade students were achieving at the 52nd percentile in reading and at the 56th percentile in mathematics on the ITBS, indicating that they were performing in the average range according to national norms established in 1996.

Table 15

IST Student Achievement: Third-Graders' Results on the Iowa Test of Basic Skills, in Percentile Ranks

School	Reading		Mathematics	
	N	Percentile	N	Percentile
Amerman	21	65	21	73
Moraine	3	50	3	62
Silver Springs	12	25	12	23
Thornton Creek	39	50	39	56
Winchester	7	66	7	58
Total	82	52	82	56

Table 16 contains MEAP scores for IST students and compares them to proficiency rates districtwide. Winter 2001 district scores were available only for Total Reading and Total Mathematics.

Table 16

IST Student Achievement: Fifth-Graders' MEAP Reading and Mathematics Scores, Winte, 2001 Results

School	Reading						Mathematics	
	Story		Information		Total		N	Proficient.
	N	Proficient.	N	Proficient.	N	Proficient.		
Amerman	12	83	12	50			12	83
Moraine	13	85	13	85			12	100
Silver Springs	9	44	9	44			9	67
Thornton Creek	38	87	38	82			38	87
Winchester	7	58	7	43			7	58
Total IST	79	78	79	70			78	83
District					416	81	415	94

On story reading, 78% of IST-served students received scores in the proficient range. Seventy percent of IST-served students scored in the proficient range on the informational reading portion of the test. This compares to 81% of all Northville students scoring in the proficient range on total reading, which is a blend of story and informational reading. In mathematics, 83% of IST-served students scored in the proficient range, compared to 94% of students overall. Northville is one of the highest scoring districts on these statewide Michigan assessments.

As indicated in Table 16, IST students' total proficiency rates in story reading compare favorably to the total reading rates districtwide. The total proficiency rate in informational reading was only 11 percentage points lower than the districtwide total reading rate. However, this is to be expected because proficiency rates on informational reading typically are lower than those on story reading. Although it is not an ideal comparison, total reading is the only statistic available for student performance districtwide. In mathematics, IST students' proficiency rate was only 11 percentage points lower than that of Northville students overall. These scores place most IST students at a level of achievement consistent with the opportunity for success in general education, but slightly below district averages.

Summary of Open-Ended Comments by Principals, Classroom Teachers, and Parents

Summary of Principal Responses

Principals described varied histories of involvement with the Instructional Support Team concept. Silver Spring's involvement began with training in 1995-97. Thornton

Creek was the next to implement a formal IST process. At the time of this evaluation, Moraine, Amerman, and Winchester had completed 2 full years of IST implementation.

Principal roles in the IST process were all described as active and involved.

Benefits observed by principals were all positively stated. Student achievement gains were consistently noted.

Future plans for IST emphasized improved diagnosis of need, parent involvement, feedback to teachers, development of common strategies, and communication between IST and general classroom staff.

Summary of Classroom Teachers' Responses to Question About Services Received

Teachers described varied services they have received from the Instructional Support Team. Sixty-four comments were received. These responses describe their perception of many different services they associate with IST. The most frequently noted services were:

Reading support:	18
Motor skill development:	15
Professional development/support:	12
Math support:	7
Fine motor:	7
Behavior:	5
Social work:	5
Speech:	5

Two comments regarding services received were clearly negative, citing lack of follow-up or paperwork requirements.

Summary of Teacher Responses to Question About Their Involvement in the IST Process

Teacher perceptions of their involvement in the IST process vary significantly. Some teachers describe minimal involvement: "I am new to Northville and have had limited involvement."

Others clearly have become more involved. "In addition to bringing concerns to the team, I have served as a team member during two quarters of the school year. Currently I am serving as an associate and am working with teachers."

A few remarks are negative: "I do not know what the students do there, nor am I ever asked what support they need."

Some teachers clearly understand the intent of the IST process: "I see a problem, call a meeting, members meet with me, we brainstorm, ideas are recorded, goals are set, members help out as I try to have student reach goals using brain stormed methods."

Of the 49 responses to this question, 11 indicate low-frequency (2 or less) involvement with IST while 15 indicate regular or high-frequency (5 or more) involvement.

Summary of Classroom Teachers' Responses to Question About Generalizing IST Learning to Other Students

When asked if involvement with the IST has generalized to other students in their classroom, 46 teachers made comments. Thirty-six note clear patterns of improved

teaching strategies which generalized to other children. “My involvement has made me pay closer attention to modifications, intervention strategies and student strengths,” is a good example.

Six teachers made comments that do not clearly indicate a positive or negative response, i.e., “We had a teacher who came into the classroom to help us.”

Four responses were negative, i.e., “No.”

Summary of Classroom Teachers’ Responses to Question About Benefits for Students

Teachers made 56 comments about the benefits to students they have observed. Of these, 55 were positive, and 1 was negative.

Benefits to students noted included greater reading success (11), greater achievement in the class (12), and alternative teaching strategies (9).

Summary of General Comments from Classroom Teachers

Nineteen teachers made general comments. Of these, 6 praised specific IST members, 3 noted the positive support process for teachers, 2 indicated slow IST response, 1 indicated quick response, 3 noted the varied skills of IST members, 1 criticized a specific IST member, and 1 criticized the process of meetings and problem – analysis.

Summary of Parent Responses to the Question About the Purpose of the Instructional Support Team

Parents made 47 comments regarding the purpose(s) of the Instructional Support Team.

The most common perception of the purpose of the IST was to provide extra help to students in need. Thirty-eight parents made this observation.

Eight parents noted the IST's role in helping the teacher develop new instructional strategies, or to better differentiate instruction.

Only 5 comments noted the IST's role in supporting parents as they work with their children.

Three parents noted the IST role of helping children become able to succeed on their own, without extra help.

A Summary of Parent Responses to the Question About Benefits to Their Child

Parents noted improved reading (16), self-confidence(7), fine-motor (6), speech (4), and general achievement (5) as benefits for their children. Improved math skills, social skills, behavior, gross-motor skills, and parent learning were also noted.

Summary of Parent General Comments

Of nine general comments, no clear patterns emerge. Four parents expressed thanks for the program. One elaborated on the fine-motor development of her child. One indicated her belief in the need for even more early elementary support. One asked for more communication with parents.

Summary of Results

It was determined in this analysis that early-intervention services using the IST model were less costly on an annual basis, and succeeded in producing equal or better

results. Fewer students were unsuccessful in general education and were subsequently placed in special education programs.

Since the use of ISTs began in 1996-97, and were later incorporated into the activities of all Northville elementary schools, special education placements have been consistently lower. At the time of this study Northville's special education rates were slightly less than half the state-average rate.

Early intervention and the use of ISTs were considered highly effective in increasing student achievement by over 70% of general education teachers, and by almost all IST personal and principals.

The achievement of students who had been identified as being at-risk, and referred for IST services, was assessed using the Iowa Test of Basic Skills in third grade or the Michigan Educational Achievement Profile in Grade 4. Overall, third-graders tested at an average 52nd percentile in reading and 56th percentile in math. MEAP scores are comparable only to district averages, and showed IST students performing slightly below district averages.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary

My broad purpose in this study was to determine the impact of Northville Public Schools' early-intervention/prevention services on district costs, special education placements, and student achievement. The study focuses on benefits for both students and teachers. The data represent the most recent information obtainable. When available, longitudinal information regarding student achievement and special education referral and placement before the inception of the IST process was used to provide comparable data. In addition, my creation of a hypothetical school based on standard or statewide data makes additional comparisons possible.

To achieve the above-mentioned purpose, the following research questions were posed to guide the collection of data for this study:

1. Are early intervention and the use of ISTs cost effective?
2. Are early intervention and the use of ISTs associated with a reduction in special education identification rates?
3. Are early intervention and the use of ISTs effective from the viewpoints of principals, general education teachers, IST personnel, and parents?
4. Are early intervention and the use of ISTs effective in increasing student achievement, improving student behavior, and improving student affect?

By studying the impact of early-intervention/prevention services in one school district, I intended to measure effectiveness over a short span of years, and to provide objective analysis of success to date so that continued improvement can occur. I hope that this study will provide a learning model for other school districts that are interested in using early-intervention practices.

In this study, I examined the effects of an early-intervention/prevention program which has been developed in one school district. This program is intended to support teachers in their efforts to cultivate early-learning success for all students; to provide support services through the IST model, both within and outside the regular classroom; to involve parent and student volunteers when appropriate; to use a peer assistance professional development model; and to engage in ongoing school-based improvement. The model examined in this study is described in detail in Appendix A.

Although this is a study of one district and one model, the results can provide important information to any district considering the development of its own early-intervention/prevention model. The results also can provide a rationale for the energy and expense that might be spent on developing similar models in other districts or buildings.

The rationale for preventing early learning failure is compelling. In the past two decades, studies have underscored the importance of early learning success in the lives of young students. Reading disabilities affect 20% to 30% of school-aged children, or at least 15 million children. Although these disabilities occur in varying degrees of severity, the enormity of the problem is striking. Twenty to 30% of school-aged children

have reading difficulties that are severe enough to hinder their performance in school (Lyon, 1995, 1997, 1998). Without significant changes to the present educational and diagnostic systems, the number will continue to rise (Capute, Accardo, & Shapiro, 1994; Duane & Gray, 1991; Lyon, 1994, 1995, 1997).

Researchers have found that failure in the early grades is highly related to failure in later schooling. A study by the International Reading Association (Allington & McGill-Franzen, 1998) indicated that intense appropriate instruction in the area of difficulty (e.g., listening, speaking, and so on) should take place before concluding that special education placement is necessary. The Council for Exceptional Children (1997) also reported this position. The national Parent-Teacher Association (PTA) concurred, stating that schools should prepare at-risk students through early intervention, rather than relying on retention or social promotion (Tuscano, 1999). Further, in a 1999 report on social promotion, the American Federation of Teachers called for early intervention as the most cost-effective remedial program (Tuscano, 1999).

In 2002, the President's Commission on Excellence in Special Education completed a review of American educational policies that affect special education. The Commission's report, entitled *A New Era: Revitalizing Special Education for Children and Their Families*, detailed nine findings and contained three major recommendations. Findings 2 and 6 are particularly relevant to this study. Finding 2 states,

The current system uses an antiquated model that waits for a child to fail, instead of a model based on prevention and intervention. Too little emphasis is put on prevention, early and accurate identification of learning and behavior problems, and aggressive intervention using research-based approaches. This means students with disabilities don't get help early when that help can be most effective. Special education should be for those who do not respond to

strong and appropriate instruction and methods provided in general education. (p. 3, Commission on Excellence in Special Education, 2002)

Finding 6 states, “Many of the current methods of identifying children with disabilities lack validity. As a result, thousands of children are misidentified every year, while many others are not identified early enough or at all” (p. 3).

The Commission’s second major recommendation asks educators to embrace a model of prevention, not a model of failure. It states,

The current model guiding special education focuses on waiting for a child to fail, not on early intervention to prevent failure. Reforms must move the system toward early intervention and swift intervention, using scientifically based instruction and teaching methods. This will require changes in the nation’s elementary and secondary schools as well as reforms in teacher preparation, recruitment and support. (Commission on Excellence in Special Education, 2002, p. 8)

Data gathered to address the four research questions were analyzed using a quantitative approach. Cost effectiveness was evaluated by considering all special education expenditures for the district and comparing them to a hypothetical school with state-average levels of special education identification. If the Northville model produced educational results equal to or better than the state-average model for a lower overall cost, it was considered cost effective (Hartman & Fay, 1996).

Reduction in special education placement rates was evaluated by considering Northville’s overall special education rates since 1992/93, and by analyzing specific disability categories since 1999/2000. Increases or decreases were compared to state trends.

Perceptions of the effectiveness of the IST processes were assessed by collecting survey data and comments from principals, teachers, and parents. More than 75%

Excellent or *Good* responses on a 4-option scale, or more than 80% *Strongly Agree* or *Agree* responses on a 5-option scale, were considered strong positive responses. All elementary principals and teachers, and all parents whose children were direct participants during the 2001-02 school year at the time of the survey, were given the opportunity to participate.

Effectiveness in increasing student achievement was evaluated by considering the achievement scores of all third- and fifth-grade students who had received direct instructional support services. Using scores on the Iowa Test of Basic Skills for third-grade students and Michigan Educational Assessment Program (MEAP) reading and mathematics test scores (from Winter 2001) for fifth-grade students, I evaluated the achievement of these previously identified at-risk students. Iowa achievement test scores ranging from the 30th to 70th percentile or above were considered positive results, as these students would not be considered for special education placement as learning disabled students. MEAP results in the “proficient” range or above were considered positive.

Discussion

The ISTs working in the Northville Public Schools elementary programs are part of a comprehensive effort to increase children’s early success in learning. This effort is based on the belief that early learning success lays the foundation for a child’s academic future. This comprehensive effort to increase early learning success includes:

1. The effort to identify and give support to delays in language development, sensory motor development, and the development of behavior and social skills

2. Support help to at-risk students both within the general classroom and through pullout support services

3. Support given to teachers within the general education classroom

4. Support given to parents who wish to work to maximize their child's development of language skills, sensory motor skills, and behavior skills.

The IST model that has been developed and used in the elementary school programs is designed to:

1. Provide early and systematic assistance to students in their regular classroom program, as well as through pullout services

2. Reduce or eliminate inappropriate referrals for testing

3. Reduce unnecessary placements into special education

4. Increase the regular classroom teacher's capacity to deal with the diverse needs of students in the classroom.

Four research questions were addressed in this study. The conclusions drawn with regard to each question are set forth in the following pages.

Research Question 1: Are Early Intervention and the Use of ISTs Cost Effective?

Early intervention and the use of ISTs (see Appendix A) are designed to provide a more appropriate educational outcome at a lower cost than traditional special education. The question addressed here is whether the IST process (Appendix A) provides an appropriate education for students by making modifications in the regular classroom and

providing support services for any student demonstrating need, thereby reducing special education referrals and placements, and thereby reducing costs.

The analysis of estimated costs of the IST process included the time given by support teachers, social workers, and psychologists and provided an estimated average cost of \$2,132 per child served through the IST process. This compares with the estimated \$8,177 cost of retaining a student for 1 year and the estimated \$9,812 annual added cost of a student's placement in special education. These estimates are consistent with county, state, and national estimates.

IST service for a specific child may continue for 1 or more years. Special education costs per child often continue for the duration of the child's school career. Added costs over a 9-year time span for special education services amount to \$88,308 per child.

Early intervention and the use of ISTs (see Appendix A) offer a considerable cost saving when compared to the possible placement of a child into a special education program. It is important to note that although some students can be appropriately served with non-special-education supports, others will need special education programming and deserve the quality and intensity of that service. However, when students can be appropriately served in the early years of school through instructional support and thereby achieve early learning success to the extent that they never need special education placement, a considerable savings to the district can be realized.

The Northville Public Schools' identification rate for special education is considerably lower than state, or national averages. The Northville K-12 special education identification rate is approximately 6.6% of the total K-12 student population.

This rate is less than half of Michigan's identification rate. Northville's rate of identification of Learning Disabled students was 2.4% in 2001/02, compared to Michigan's 2000 rate of 5.6% of students.

Northville's rate of special education identification has declined overall since 1992/93 from 10.2% to 6.6%, during which time the state's rate of identification has increased from 10.8% to 13.3%.

By comparing Northville 2000/01 special education costs to a hypothetical state-average district, it is estimated that Northville costs (\$2,771,776) are less per year than the hypothetical district's costs (\$5,671,489).

Northville's early intervention and use of the Instructional Support Teams meet the criteria used to determine cost-effectiveness. Costs are less than the compared state-average district. Better results are noted by the lower levels of need to place students in special education programs. Improvements in student achievement are further noted in Question 4.

Therefore the use of early intervention and Instructional Support Teams resulted in reduced special education placement and reduced district costs.

**Research Question 2: Are Early Intervention and
Use of ISTs Associated With a Reduction in
Special Education Identification Rates?**

In 1992/93, the state special education identification rate was 10.8%. Northville's was 10.2%. Since that time, the state identification rates have consistently increased (to 13.3%), whereas Northville's have decreased (to 6.6%). In tracking data since 1996/97, the greatest reduction in eligibility has occurred in the category of learning disabled students. In 1996/97, almost 4% of K-12 students in Northville were identified as learning disabled. In 2001/02, the rate of learning disabled identification had been reduced to 2.37%.

Since early intervention training efforts began in 1992/93, and since the introduction of the Instructional Support Team process at one elementary school in 1996/97 and implementation in all elementaries in 1999/00, special education rates in the district have decreased. From 1992/93 to 2001/02, district rates decreased from 10.2% to 6.6%. During this same time period, state rates have increased from 10.8% to 13.3%.

District reductions in special education identification rates are noted during the years that early intervention training and institutionalization of the Instructional Support model occurred (Table 6).

**Research Question 3: Are Early Intervention and the Use of
ISTs Effective From the Viewpoints of Principals, General
Education Teachers, IST Personnel, and Parents?**

Survey results indicated generally positive perceptions of the IST process. Differences did exist, however, in principals', teachers', and parents' responses to particular questions.

More than 70% of general education classroom teachers rated the IST's effectiveness in increasing student achievement as excellent or good. This compares to the nearly unanimous agreement by IST personnel and principals that the IST's effectiveness in increasing student achievement was excellent or good. Using the 75% standard of excellent or good responses, these were considered strong positive responses.

About 57% of classroom teachers rated the IST's effectiveness in improving student behavior as excellent or good. This rating did not meet the 75% criterion for a strong positive response. On the other hand, 100% of principals and 88% of IST personnel rated the IST's effectiveness in this area as excellent or good. These were considered strong positive responses.

Approximately 70% of classroom teachers rated the ISTs' effectiveness in improving students' affect as excellent or good. In contrast, all of the principals and about 96% of IST personnel gave ratings of excellent or good in this area. These were considered strong positive responses.

It is important to note that a consistent group of negative general education teacher responses was noted on all three questions about IST effectiveness. A "poor" effectiveness rating was given by 12.7% of these teachers regarding IST effectiveness for increasing student achievement; 17.5% rated IST effect on improving behavior as "poor"; and 16.7% rated "poor" the IST effectiveness in improving student affect.

No IST personnel or principals gave "poor" ratings on these questions. The differences among respondent groups is worth exploring. Principals and instructional support staff had worked most closely with the IST process, whereas some classroom

teachers, especially upper elementary teachers, may have had limited experience working with this process. It is also worth noting that the IST process places great emphasis on collegial interaction between instructional support staff and regular classroom staff. Referral to the IST includes planning meetings and collecting data regarding concerns about an individual student in the regular classroom. It is possible that some classroom teachers viewed the IST referral process, collection of data, and collegial approach to problem solving as burdensome.

Responses to open-ended questions confirm the differences between respondent groups. Benefits observed by principals were all positively stated. Student achievement gains were consistently noted.

Classroom teacher responses cited services received including reading support (18), motor skill development (15), professional development support (12), math support (7), fine-motor support (7), and behavior support (5). It is unclear if these reports adequately portray the frequency of services received, or the perception of support received. Two responses to this question were clearly negative, citing lack of follow-up or paperwork requirements.

Classroom teachers gave varied responses to the question about their involvement with the IST process. Degree of involvement described varied. Eleven of 49 total responses indicate low-frequency involvement, while 15 describe high-frequency involvement. One teacher captured the intent of IST teacher involvement: "I see a problem, call a meeting, members meet with me, we brainstorm, ideas are recorded, goals

are set, members help out as I try to have student reach goals using brainstormed methods.”

When asked how their involvement with IST generalized to other students in the classroom, 36 of 46 respondents indicated improved teaching strategies for other students, in addition to their IST referred students. Four respondents gave negative responses, indicating no positive carry-over to other students.

The analysis of general comments from classroom teachers reinforces the pattern of many positive experiences, but a few clearly negative perspectives toward IST. Of 19 comments, 1 criticized a specific IST member and 1 criticized the process of meetings and problem-analysis.

It is fair to conclude that while most aspects of the IST process received strong positive responses from all groups, there is still a clear pattern of some classroom teachers who are not pleased to participate. The reasons for their lack of positive response range from criticism of individuals to their perception of a burdensome process. Because comments were offered by some classroom teachers but not all, and because of the non-specific nature of some of the comments, it is hard to fully understand the nature of any discomfort with the process. Use of an interview survey process might be a more effective technique to accurately determine teacher perception of both benefits and concerns.

Parent responses to open-ended questions were consistently positive, but also demonstrated patterns of perception worth noting. Parents most commonly perceived the purpose of IST as being to provide extra help to students in need (38). Only 8 parents

noted the IST role in helping teachers develop new instructional strategies, or to better differentiate instruction. Only five noted the IST's role to support parents as they work with their own children.

Parents perceived benefits to their children ranging from improved reading (16), self-confidence (7), fine-motor (6), speech (4), and general achievement (5).

Responses to specific questions on the survey are also worth discussing. Approximately 40% of classroom teachers agreed that the school's curriculum was appropriate for all students, whereas approximately 30% disagreed or strongly disagreed. Approximately 60% of principals strongly agreed or agreed that the curriculum was appropriate for all students, whereas 40% disagreed or strongly disagreed. Further, approximately 80% of classroom teachers strongly agreed or agreed that changes were needed in classroom instructional strategies in order to meet the needs of all students, whereas all of the principals strongly agreed or agreed that such changes were needed. Both groups gave strong support to the need for additional professional development in order to meet the needs of all students.

Teachers gave stronger support than principals to the idea that the IST process had resulted in greater parent involvement with the school. Principals gave greater support than classroom teachers to the idea that the IST process had resulted in greater parent knowledge of how to work with their children at home. In response to a question asked only of principals, 100% of the elementary principals strongly agreed or agreed that regular classroom teaching had improved as a result of the IST process.

Both principals and teachers gave strong positive responses to the following:

1. Changes are needed in classroom instructional strategies in order to meet the needs of all students.
2. Teachers need additional professional development in order to meet the needs of all students.

Responses to questions posed to classroom teachers regarding IST effectiveness were considered strong positive responses if they met or exceeded the 70% strongly agree or agree criterion. Approximately 85% of classroom teachers strongly agreed or agreed that the IST process should continue in their school, and more than 80% strongly agreed or agreed that the recommendations of the IST were helpful to the child. Almost 80% of the teachers strongly agreed or agreed that the recommendations of the IST were helpful to the teacher. More than 70% of classroom teachers agreed or agreed that they had a good understanding of the IST process and that children made progress as a result of the intervention plans. Approximately 70% of classroom teachers strongly agreed or agreed that students were successful as a result of the IST process. Approximately 65% strongly agreed or agreed that goals/recommendations made at the IST meeting were completed in a timely fashion. More than 60% strongly agreed or agreed that the amount of paperwork involved was manageable, that co-teaching with members of the IST had been helpful to them as teachers, and that co-teaching with members of the IST had been helpful to students. Approximately 55% strongly agreed or agreed that, as a result of the IST process, they had developed new skills that could be applied to all children in the classroom.

In summary, teachers gave strong positive responses to the following:

1. I have a good understanding of the IST process in my school.
2. The recommendations of the IST were helpful to me as a teacher.
3. The recommendations of the IST meetings are helpful to the child.
4. Children make progress as a result of the intervention plans developed at the IST meeting.
5. I feel that the IST process at my school should continue.

Strong positive responses were not fully achieved on questions regarding timeliness, manageable paperwork, new classroom teacher skills, student success as a result of IST, or helpfulness of co-teaching.

Principals' reports of IST effectiveness were excellent or good in all areas, including referral and contracting, problem identification, strategy development, implementation, and evaluation/review. The principals reported such IST benefits as improved reading, improved behavior, enhanced self-esteem, a shift from a deficit model to building on strengths, instructional plans based on what is known about learning, a higher level of student engagement, a higher level of student motivation, early intervention focused on student learning, good parent support, and involvement by all staff members.

Parents gave consistently positive ratings to the effectiveness of the IST programs in their buildings. Almost all of the parents strongly agreed or agreed that they worked with their children at home to supplement the education they received at school. Approximately 90% of the parents strongly agreed or agreed that they had an important

role to play in the IST process. More than 80% of the parents strongly agreed or agreed that, as a result of the IST process, they had learned new strategies to help their children.

Several issues emerge for the improvement of the use of ISTs based on these data. Forty percent of principals and 28.8% of teachers expressed strong concerns about the appropriateness of the curriculum for all students. There were no teachers that strongly agreed that the curriculum is appropriate for all students. The quantity and difficulty of curriculum may be the issue, or difficulty differentiating instruction of curriculum may be the issue. Or both. This concern certainly warrants further study. Collaboration between staff and refinement of teaching strategies may not be enough to overcome basic problems with an inappropriate curriculum for some students.

All principals and about 80% of teachers agreed or strongly agreed that changes in instructional strategies are necessary in order to meet the needs of all students, and that additional professional development was needed. This is overwhelming evidence that teacher learning is important to new instructional practices that better meet the needs of all learners. This response points out this need within Northville, and suggests that teacher learning may be a factor in other sites of early-intervention practice.

The analysis of classroom teachers' responses to the question about generalizing IST learning to other students is important to note. Of 46 responses, 36 teachers expressed clear patterns of improved teaching strategies which generalized to other children. As practiced, ISTs (see Appendix A) are serving as a professional learning model for these teachers.

While 85% of classroom teachers agree or strongly agree that the IST process should continue, and all principals agree or strongly agree that regular classroom teaching has improved as a result of this process, there are still some clear negative responses from some teachers.

Although formal IST processes had been in place for 2 to 5 years, depending on the building, 19.2% of classroom teachers disagreed or strongly disagreed to the statement that they had a good understanding of the IST process. Some (22.7%) expressed concerns about timely recommendations, and 17.9% expressed concerns about the manageability of paperwork. And 24.2% disagreed or strongly disagreed that they had learned new skills that would apply to all children in their classrooms.

Without additional investigation it is difficult to know with certainty the basis for these concerns. Are these teachers reluctant to change practice, avoiding use of the IST, and longing to send less-successful students down the hall to a special education teacher? Or do these concerns accurately reflect slow or unproductive interactions with poorly prepared IST staff? Use of an interview-based survey might clarify some of these concerns.

Research Question 4: Are Early Intervention and the Use of ISTs Effective in Increasing Student Achievement?

Results of the Iowa Test of Basic Skills for all third-grade students who had been involved in IST referrals, and the fourth-grade MEAP reading and mathematics scores for students who were presently in fifth grade and had received IST referrals and services, were evaluated for this assessment of student achievement. Overall, third-grade students

who had received IST services because they were identified as at-risk, were achieving at the 50th percentile in reading and at the 56th percentile in mathematics. This demonstrates that after receiving IST services, they were performing in the average range according to national norms. Fifth-grade students who had received IST services scored at district average levels in story reading, and were only 11 percentage points lower in informational reading. It should be noted that Northville MEAP scores are consistently high compared to most districts in Michigan. These results indicate that students receiving IST services were achieving at an above average or proficient level overall. In mathematics, IST students in fifth grade reached proficiency at a rate only 8 percentage points lower than Northville students overall, as 83% of these students demonstrated proficiency by Michigan MEAP standards.

It can be concluded that by third grade, on average, the at-risk students who were referred to the IST in K-3 had been able to gain skills allowing them to perform at national average or better levels on the Iowa Test of Basic Skills in reading and math. By performing at these levels it is assumed that they, on average, have the skills to successfully participate in the general curriculum.

The fifth-graders in our sample were evaluated using the state assessment test (MEAP in the winter of their fourth-grade year). Of this sample 78% scored as proficient on story reading, 70% scored proficient in informational reading. Proficiency rates on informational reading are typically lower than story reading.

In mathematics this same sample of fifth-graders was 83% proficient on the state assessment test (MEAP).

It can be concluded that Northville students who are referred and served through the Instructional Support Teams in most cases gain skills that allow them to perform at average or proficient levels.

This assessment did not collect pre-IST service achievement data so that a direct comparison of skills, pre- and post-treatment, could be made. Nor is there a clear picture of how many children made extraordinary gains, and how many continued to struggle and may in some cases have been referred to special education.

The sample groups as a whole, once considered at-risk, have made sufficient progress so they perform well beyond the skill level at which special education referral would be recommended.

Conclusions

It was determined in this analysis that early-intervention services using the IST model were less costly on an annual basis, and succeeded in producing equal or better results. Fewer students were unsuccessful in general education and were subsequently placed in special education programs. The Northville early-intervention services are thereby cost-effective.

Since training regarding early-intervention practices began in 1992-93, and the use of the IST process began to be implemented in 1996-97, special education placements have consistently declined. This is in contrast to the Michigan trend of steadily increasing special education identification. Early intervention and the use of ISTs were considered highly effective in increasing student achievement by over 70% of general education teachers and by almost all IST personnel and principals.

The achievement of students who had been identified as being at-risk, and referred for IST services, was assessed using the Iowa Test of Basic Skills in third grade or the Michigan Educational Achievement Profile in grade four. Overall, third graders tested at an average 52nd percentile in reading and 56th percentile in math. MEAP scores are comparable only to district averages, and showed IST students performing slightly below district averages. The sample groups as a whole, once considered at-risk, have made sufficient progress so they perform well beyond the skill level at which special education referral would be recommended.

Recommendations

The findings from this study indicated that the costs of providing services through the IST model are less than the costs of retention and/or special education placement. Long-term benefits to the district include smaller special education costs than in an average Michigan school district, and long-term prospects for continued reduced costs based on the relatively new and still developing model of instructional support used in the district. Continued use and development of the IST process are in the long-term interests of students, their families, and the school district.

Whereas special education identification trends in Wayne County, the state of Michigan, and in the nation indicate increasing overall special education identification and special education costs, Northville's trend has been decreasing special education identification since 1993-94. Although the Northville model of instructional support and early intervention may not be suitable for all districts, this approach may serve as a starting point for districts interested in improving students' early learning success while

reducing special education placements and costs. This approach is consistent with the recommendations of the President's Commission on Excellence in Special Education (Commission on Excellence in Special Education, 2002).

IST effectiveness ratings from teachers, parents, and principals were generally positive. A careful analysis of responses to individual questions indicated that continued improvement could occur in the development of classroom teachers' awareness of the IST process, timely completion of the goals and recommendations made at the IST meetings, and continuing attention to the amount of paperwork involved in this process.

Although a majority of classroom teachers and principals indicated strong agreement or agreement with the idea that the school's curriculum was appropriate for all students, approximately 29% of classroom teachers and 40% of principals expressed disagreement or strong disagreement with this statement. This may indicate a need to examine the curriculum with an eye to its appropriateness for all students, or a need for further training in differentiating instruction so that the curriculum can be delivered more appropriately for some students.

The need for continued changes in classroom instructional strategies in order to meet the needs of all students was supported by a strong majority of teachers and all of the principals. This reflects a continuing desire to improve instructional practice in the district and is consistent with a strong commitment to professional development.

Additional Research Suggested

This study suggests that early intervention using the Instructional Support Team model is cost-effective, helps reduce the need for special education, is generally, although

not universally regarded as positive by principals, IST staff, classroom teachers and parents, and is associated with increasing student achievement. But a study of one district which includes five elementary buildings is a case-study, and many questions remain before this model can be recommended as effective for most districts. This study should be replicated in other districts to note both the differences between districts' programs and results.

It will be important to collect data from efforts to replicate this study, and notice differences between this and other districts' early-intervention or IST programs.

Additional research is suggested to explore the following questions:

1. While a model may work well within one district, can it be used at a larger scale (county or state) with similar results?
2. Which early-intervention models are most effective at scale? How does the IST model compare to Success for All (Slavin, 1996), broad use of Reading Recovery (Clay, 1993; Slavin, 1996), community efforts before school-entry like the Parent as Teachers program (Coleman, Rowland, & Hutchins, 1997), universal preschool, full-day kindergarten, low class-size, and other models.
3. The Northville early-intervention model (Appendix A) has successfully reduced the need for special education placement. Is it possible to reduce further? What low levels of eligibility for special education could be reached by a comprehensive community school approach?

4. A small but consistent negative response to the IST model in Northville was noted among classroom teachers. What improvements in training or practice could reduce these concerns? Or are these a necessary by-product of change?

5. What are the characteristics of early-intervention efforts that successfully improve learning outcomes within a school?

6. What is the role of the principal in successful early-intervention efforts?

7. What training efforts would best prepare teachers for a successful building emphasis on early intervention?

The efforts to reduce early learning failure described in this study, and other efforts across the nation, are crucial for the long-term well-being of our society. It is my hope that the success of this and other models, along with the encouragement given by the Commission on Excellence in Special Education, will increase the commitment to quality research and practice which supports early learning success in American schools.

APPENDIX A
INSTRUCTIONAL SUPPORT PROGRAMS
“A WORKING MODEL”

Please note: This Appendix A has its own appendix and references

Northville Public Schools

Instructional Support Programs

“A Working Model”

Amerman Elementary

Moraine Elementary

Silver Springs Elementary

Thornton Creek Elementary

Winchester Elementary

Instructional Support Programs *February, 2002*

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Instructional Support Overview

There are many reasons for trying to prevent early learning failure whenever possible. Early learning success is related to the absence of adolescent and teenage risky behaviors including violence, dropping out of school, early sexual behavior, pregnancy, substance abuse and delinquency. Early learning success lays the foundation for a child's learning future. Children who come to believe they are good at reading, writing, mathematical thinking and learning in general, tend to be more successful throughout their entire school career.

In recent years, the cost of allowing early learning failure has also received significant attention. Rates of special education referral and identification continue to increase. Children with learning disabilities make up approximately 50% of all special education identified students. Costs related to special education continue to increase, and in some cases, have a negative impact a school district's ability to deliver quality educational services for all students.

While some schools or school districts have continued to observe high rates of reading failure and increasing rates of special education identification, others have looked at program or system changes to reduce early learning failure. Initiatives involving class size for early elementary programs and the use of soundfield enhancement systems have been tried with considerable success. Quality preschool experiences, motor development programs and parent training programs have also demonstrated success. Other specific program designs include *Reading Recovery*, *Success for All* and *Instructional Support Teams* (ISTs). Programs like these are leading the way to a new awareness of the opportunity we have to reduce early learning failure. Districts can improve the lives of young children while saving financial resources in the long-term.

The basic idea here is to systematically help children get off to a good start in school. Sadly, this notion is at variance with our systems approach which requires that students experience failure over a number of years before a significant discrepancy between potential and achievement can be noted, which then allows a child to be certified as learning disabled or otherwise eligible for special help. Months and years of frustration are of little benefit to any young learner. Many studies have documented that poor performance in the early years almost invariably continues (Francis, Shaywitz, et al, 1996; Torgesen and Burgess, 1998; Stanovich, 1986).

Northville Public Schools has chosen to develop an Instructional Support model that fits the unique needs and strengths of our district. We recognize that other districts, or buildings within a district, might develop an IST model with different characteristics than ours.

Northville Public Schools: Definition of Instructional Support

A dynamic process of collaboration and team support which includes:

- ▶ Helping All children to be emotionally, socially and academically successful within the classroom setting.
- ▶ Assisting teachers in developing and implementing strategies and techniques that will help at-risk children in their classrooms.

The instructional support concept was introduced to Northville Public Schools in the mid 1990's. Consultants including Jim Tucker, Ed Gickling, Judy Wood, Linda Tilton and Todd Gravois helped us consider new ways of identifying and reaching at-risk students.

At that time our special education caseloads were higher, and we were not reaching many students that didn't qualify for special education services but who were struggling in the classroom daily. We were concerned about these students who were "falling through the cracks". We knew that there had to be a better way of reaching ALL students and that early intervention was the way-but how could we make the changes that seemed so foreign and beyond our reach?

Background

Northville Public Schools has five elementary schools within its boundaries. Each elementary school has developed its own version of instructional support that fits that school's needs. Each is in a different stage of development, but there are some common threads of structure and basic philosophy that tie them together. In addition, there are some unique characteristics that are important to note.

An instructional support program can never be static. It is always changing and evolving. As the team members' skills improve the focus and methods of interaction shift and develop. As teachers become more confident with at-risk learners in their classroom they spread this knowledge to parents and other teachers. Instructional Support takes on a life of its own and grows and develops in ways you can't imagine. Which way your individual team will develop cannot be predicted. But if you remember that your individual team is the driver you can go just about anywhere you want it to go!

Setting a Foundation

Once your school is ready and willing to initiate an instructional support plan you are ready to go. The primary factor needed for success is acceptance of the instructional

support concept that ALL children can learn, and that the entire school community is committed to reaching this goal.

The concept of instructional support needs to be presented to the entire staff as a tool for helping ALL children learn. It is a concept that will support teachers and children.

1. It is quality instruction for **All** children
2. It is a **prevention-based** early intervention model
3. It is collaboration between staff members
4. It is a method of sharing best practices for instruction among all staff members
5. It is a shared vision
6. It is problem solving

Instructional Support / Getting Started

Through presentation of information and discussion, staff can gain increased awareness of the instructional support concept. At Silver Springs Elementary School the instructional support process was initially developed using a core team that was committed to spearheading the process and getting it off the ground. In this case the team had all attended inservice training focused on the instructional support concept and it's benefits. A variety of instructional support models had been researched and parts of these were used as the basis for the Silver Springs model. The specific plan and format was organized with the particular staff in mind, knowing that the staff was willing to try new ideas. Most teachers had an interest in sharing and receiving information and ideas about children and were open to working as a team to discuss at-risk children in their classrooms. These teachers were also open to having support staff working side by side with them in the classroom.

A general framework for the instructional support process was developed and shared with the entire staff in the spring of the year before beginning the process. An informal staff meeting was called and the plan was shared with the staff. Each staff member was given a packet of information to look over and comment on. They were encouraged to discuss the plan with their collegial members.

Within two weeks the team made arrangements to meet with each collegial team to discuss any questions or concerns they may have about the process and the responses were noted and brought back to the core team. The primary concerns noted were few and were generally related to concerns about too much paperwork. Changes were made to reduce paperwork and some modifications were made to the core record keeping forms.

To solidify the process and push the instructional support concept to the top of the list for all teachers it is recommended that it become a school improvement goal. This labels the concept as valid, accepted by all and encourages teachers and administrators to develop the idea to the fullest.

Useful Concepts

1. Place all instructional support papers and information in individual files for each child referred for instructional support.
2. We use blue file folders. This allows us to keep track of student files and keeps us organized.
3. Blank blue file folders are housed in an area of the staff lounge dedicated to instructional support. This is a neutral site which is accessible to all staff and also houses the instructional support library.
4. We place blue dots on transfer cards (when students are placed into receiving classrooms at the end of the school year). This alerts the receiving teacher that the child had received instructional support of some type the previous year.
5. Students receiving instructional support who transfer to a new school in another district have a card filled out and placed into their CA-60 with a list of support and strategies that have helped the child.
6. Students transferring up to middle school from elementary school and who have received some type of instructional support in 4-5th grade have this information shared with the receiving counselors. In many cases the counselors will check on these students more frequently in the first few weeks of transition to middle school. In many cases they will also share information and working strategies with their classroom teachers.
7. Records are kept which includes the name of students receiving instructional support and the dates of support meetings and the status of progress. At a glance we can see who is receiving assistance and their current status.

Who is on the Instructional Support Team?

The makeup of the instructional support team can vary depending on the specific needs of the school building. The core team always consists of the individual students classroom teacher. In addition, the team may include any or all of the following staff members: resource room teacher(s), classroom teachers, speech/language pathologist, learning consultant, teacher assistant and principal. The school social worker and psychologist are also included on days they are available. There are different ways of organizing your team:

1. Core team that consists of 4-5 members. All team members go to every instructional support meeting.
2. Team made up of members invited by teacher based on the specific needs of the student. The core team may remain the same but additional professionals invited e.g. social problem-social worker is invited.
3. Team partnership assignments based on the case manager model. Instead of a core team the teacher is assigned a primary "support partner" and a secondary support partner when he/she refers a student for support. The primary partner assists the teacher on a one to one basis with contracting, problem identification and determining assessment or screening needs. The team partner meets with the teacher and primary partner to brainstorm ideas and strategies as needed and to determine intervention procedures.
4. The partnership concept helps to support carryover to the classroom teacher and one person responsible for ongoing monitoring of student achievement.
5. Partnership assignment with whole team meeting if needed for additional ideas or expertise.

How Instructional Support Works

Typically most instructional support models are teacher driven. This means that the teacher is the primary support for each child in his/her classroom and he/she makes the decision to approach the instructional support team. When a teacher approaches the instructional support team for assistance he/she is making a commitment to work collaboratively and to be an integral part of the support team.

Models for Setting Up Meetings

Silver Springs Model:

1. When the teacher makes a request for instructional support he/she speaks with a member of the core team.
2. The teachers name and child's initials are listed on the master school calendar in the office for a specific date at 8:15 am.
3. The last names of the team members attending the meeting are listed after the child's initials.
4. The school secretary transfers this information onto the weekly calendar that all staff receive in their mailbox. It is the staffs responsibility to note meetings they are to attend. Meetings can take place on any week day morning and occasionally we meet at lunchtime if this is mutually agreed upon.

Winchester Model:

1. The classroom teacher refers a student for instructional support and one member of the team sets a date to meet.
2. The instructional support member writes up an agenda sheet with the teacher's name, student's name and date of meeting. The agenda sheet has room for meeting notes and is distributed to each invited member at the beginning of the week.
3. The team meets as a whole one day per week but then splits off into mini groups or clusters as needed to support the teacher.

The Silver Springs Model

After the teacher has referred a child for support, two members of the team are assigned to be the teacher's support partners. One partner is identified as the "primary" support partner. It is the responsibility of the "primary" support partner to meet with the classroom teacher to contract and help him/her to identify the specific concerns he/she has about the child's progress. This meeting typically takes no more than 10-15 minutes and is informal. The role of the primary support partner is to ask specific questions of the teacher and to help prioritize areas to focus on. This is an extremely important part of the process. Defining specific concerns and placing them in observable terms can frequently be challenging. In some cases it is apparent that additional information and assessments need to be completed before a specific concern can be identified. In most situations we need to ask:

1. Why have you asked for a support meeting about _____?
2. What is your primary concern at this point? (The support partner may need to ask some probing questions to delineate **specific** areas of concern.)
3. Tell me what _____ can do in this area. Tell me what _____ has difficulty with in this area.
4. What strategies have you tried? (when, for how long, what were the results?)
5. What would you like _____ to be able to do in this specific area within a specific time, i.e., one month?

If the teacher has difficulty answering these questions, then some informal assessments may need to be completed, or records and work samples may need to be secured. This is also a part of instructional support and the support staff can take the time to teach informal assessment techniques: completing a running record, securing data etc.... Next, the initial support meeting date arrives and the teacher or support partner shares the identified concern in observable and concrete terms. The team then has time to collaborate about strategies to reach the set goal. The strategies can be incorporated by

the teacher, modeled to the teacher, teacher assistant or other staff member by the support staff.

No off task conversation or lengthy explanations take place during the support meetings. Each meeting lasts approximately 30 minutes. The "primary" support partner typically runs the meeting and the secondary partner may take notes. Prior to completing the meeting the goals are restated, the strategies are listed, who will implement the strategies or program will be determined and the criterion to gauge success are determined. The next meeting date is set and this typically takes place in 4 weeks. The "primary" support partner will be monitoring and checking with the student and teacher on an ongoing basis.

Meetings continue for each student until the teacher feels that the child is making significant gains in the area of concern and that he/she no longer needs to meet with the support team.

In some cases, many different strategies and instructional tools are used with a student and yet little or no progress is observed. At this point the need to pursue comprehensive special education testing may be discussed and recommended. If this occurs, the team typically has a good working relationship with the child and the parents and testing goes smoothly. In most cases, we already have a lengthy list of student strengths and weaknesses and strategies that work and don't work.

The instructional support process is dynamic and constantly changing. As new ideas are shared and the child begins to make progress everyone involved feels success. The ripple effect occurs from one child to another and from one teacher to another. As the teacher's repertoire of skills expand to include a wide variety of techniques that work for ALL children in the classroom the teacher's sense of ownership and responsibility increases for All of her children as well. Typically teachers can identify 2-3 or more children within their classroom that have similar difficulties as the referred child.

The following guidelines have been implemented in the Northville Public Schools to assist in the instructional support process. This process offers a concise framework for delineating goals for student improvement and a consistent plan for monitoring achievement and follow-up.

Instructional Support Contracting/Problem Solving Guidelines

Contracting

This 5-7 minute contact with the teacher sets the foundation for the problem solving process. The support partner meets with the teacher to briefly define and emphasize the problem solving process, reinforce that the focus of assessment is on the interrelationship between the student and the instructional environment and interventions are primarily targeted at students, teachers, parents and instruction. A commitment is secured from the teacher that he/she would like to engage in this process with the support of the instructional support partner (or team).

Statement of Observable Concern

This is a vital component of the instructional support process. The support team member works with the teacher using collaborative consultation skills to help the teacher clarify the primary area of concern and determining present instructional practices that impact this concern.

Data Collection

Data is important at this point to determine the student's present level of performance and better understand the existing problem.

Measure student's current skills in the area of concern and document current performance in very specific terms.

State Specific Goal

As a result of the data collection if a gap exists between current and desired performance a specific goal is determined including criterion, performance goals and time limits.

Intervention

What? (what is to be worked on?)

When/How Often?

Who?

Motivational Strategies?

Explore possible strategies, teaching ideas, changes in instructional delivery which may help the child reach the determined goal.

The goal of this stage is to determine strategies that can be embedded into the general classroom and which the teacher can implement.

Plan for Monitoring Intervention

A plan is set to assure that the plan will be implemented. Additional meetings are scheduled to monitor student progress. The instructional support members will share responsibility in collecting, charting and analyzing data collected.

Evaluation of Intervention

At a scheduled meeting, the team determines progress based on specific data collected and group discussion. The need to continue to meet concerning this area of concern is determined by the team.

Reference: Todd Gravois, 2000.

Conclusion

The best way to develop an instructional support process involves open discussion between staff members, an analysis of student/staff needs and a commitment to making the process work. Just as no two schools will ever be exactly the same, their instructional support programs will differ. School climates differ, teacher interaction is different and professional expertise varies. When developing an instructional support program, this concept should be recognized and incorporated into the individual school plan. This recognition will allow the staff to develop a support program that is uniquely theirs and that they can recognize as their own. Never think that an instructional support program can be reproduced and placed within a school building without making key modifications to match specific staff and school needs. If this guideline is followed, a program will be created that staff can support as their own.

Developing Literacy Skills

It is every educator's goal to produce "good readers" but all too often some children find learning to read out of their grasp. Often we as educators do too little too late! An emphasis on early intervention and instructional support can help many of these children meet the challenge of reading with success. By recognizing the importance of early motor skill development and parent support we can help create healthy children who are ready to learn.

Children don't just become "ready to read". Literacy develops from hard work that begins at birth.

Setting the Foundation

1. Exposure to reading materials. There is a direct connection between a child's ability to become a good reader and the number of books they have access to.
2. Good models. Seeing others reading and using literature sets a foundation for continuation of this pattern in young children.
3. Increase near point and related visual skills. Reduce the amount of video and television watching to no more than 1 hour per day. Encourage hand-eye play.
4. Basic motor skill development. Replace television watching with physical activity. Any physical activity that involves continuous activity and includes large body movement is best.
5. Language exposure at home. Teach parents to talk with their young children. Asking the child open-ended questions will help them to develop stronger communication skills. Strong communication and language skills are precursors to reading!
6. Persistence skills. Develop attending skills in young children that are developmentally appropriate. Encourage early listening skill development.
7. Encourage early phonemic awareness. Help children to notice the sounds in words, to discover their existence and distinctness and to help children make the "connection" between phonemes in words and letters of the alphabet.
8. Basic academic skills. Children need to develop letter identification for upper and lower case letters.
9. Encourage parents to set limits for their children and stick to them.

Literacy Support Programs in Northville

(Beyond general education instruction)

Speech Time

The speech therapist and the kindergarten teacher run phonemic awareness and speech correction program. Lessons are aimed at increasing phonemic awareness while working on correct production of the most commonly misarticulated speech sounds.

gallowde@northvillek12.mi.us

Classroom Based Letter Club

At the beginning of the year all first grade students circulate amongst five adult directed activities for approximately five minutes each. The focus of letter club is to provide small group direct instruction and practice in the accurate formation of letters. A variety of multisensory materials are used.

vanstodi@northvillek12.mi.us

hillarja@northvillek12.mi.us

Pull out Letter Club

An early intervention program for first grade children designed to reinforce classroom teaching in letter and sound recognition, phonemic awareness, phonemic blending, segmentation and rhyme. This is a pull out program geared towards extensive repetition and use of multiple learning modes (both written and oral).

Berryla@northvillek12.mi.us

Birkve@northvillek12.mi.us

Sixtba@northvillek12.mi.us

Reading Start

This is a copyrighted reading program designed by the Learning Consultants of Northville Public Schools. It is used at all elementary schools in Northville. Reading Start is a first grade pullout intervention program that combines phonics instruction and guided reading. This program supplements but does not replace classroom instruction. Parent participation is vital to this program.

Reach for Reading/Reaching Up/Reading Connection

A one to one reading instruction program which meets 30 minutes daily or 50 sessions. Each building provides a comprehensive intervention program designed to meet the individual needs of their students.

berryla@northville.k12.mi.us

birkve@northville.k12.mi.us

hillarja@northville.k12.mi.us

sixtba@northville.k12.mi.us

vanstodi@northville.k12.mi.us

Reading Start with Motor Development

A first grade small group reading program that includes a 10 minute motor development program.

Hillarja@northville.k12.mi.us

Osborneca@northville.k12.mi.us

Shirkka@northville.k12.mi.us

Second Grade Reading Boost with Motor Development

A second grade reading program that combines a 10 minute visual memory/motor development program with 10 minutes of phonics instruction and 10 minutes of guided reading. In addition there is a home based connection.

Hillarja@northville.k12.mi.us

Osborneca@northville.k12.mi.us

Shirkka@northville.k12.mi.us

Basic Learning Principles

There are a few key basic learning principles that are important to remember when working with ALL young children.

The Instructional Match

Frustrational Level: less than 93% accuracy
Instructional Level: 93-96% accuracy
Independent Level: 97-100% accuracy

Working at the student's instructional level allows for a high rate of on-task behavior, task completion and comprehension. Optimal learning conditions are present at this level.

Working Memory

Age	Working Memory Capacity
3	0
5	00
7	000
9	0000
11	00000
13	00000
15	000000

Children can only hold a certain amount of new information in their mind at one time.

Time on Task

Age	Time on Task
5	7 minutes
6	8 minutes
7	9 minutes
8	10 minutes
9	11 minutes

Students can attend or focus on task for the same amount of minutes as their age plus two.

Repetition Repetition Repetition

IQ 120=25x
IQ 100=35x
IQ 80=55x

Note: Repetitions are important! All children need to revisit new information to remember it! In addition these repetitions must be successful.

Effective Classroom Based Instructional Practices

1. Teach at the student's instructional level
2. Use a variety of strategies but allow time and practice for the child to learn and apply a strategy.
3. Used varied groupings
4. Use small group instruction
5. Establish cooperative groups
6. Teach strategies in meaningful context
7. Establish a high rate of on task behavior (engage the student)
8. Use direct instruction
9. Stress high level thinking questions
10. Have high expectations
11. Stress quality vs. quantity
12. Develop authentic assessment plans
13. Let the student's need drive instruction
14. Establish adequate time blocks for literacy that includes instruction, independent reading time and a writing connection.
15. Research indicates that students who are reading below grade level need adequate time to practice reading. Increasing the amount of time dedicated to reading and immersing students in literacy both in the classroom and at home is vital. Consistent daily practice with books at the student's instructional level is a primary indicator of student reading success. A variety of books including narrative and informational must be available for student's to select and enjoy under the guidance of the classroom teacher.

Determining the Reading Level of Your Students

Michigan Literacy Progress Profile Assessment: Research based assessment tool used to gather information about the literacy skills of children through third grade. Through this assessment the needs of individual students can be identified and addressed.

Running Record: An evaluation tool used to determine a child's instructional reading level.

Qualitative Reading Inventory: An evaluation tool used to determine a student's reading level, which includes:

1. Word lists to assess accuracy of word identification, assess speed and automaticity of word identification and to determine the starting point for reading the initial passage
2. Assesses comprehension of all passages through retelling and questions
3. Assists in determining reading levels and in determining reader strengths and needs (narrative and expository text)

Todd Gravois Grade Level Assessment: A reading screening that uses the student's grade level text to determine student reading fluency, reading needs and assist in identifying specific goals for intervention including word study, fluency and comprehension.

Individual Conferences: The teacher meets individually with the student to discuss his/her reading. Discussion may include; books the child has read, dislikes and likes as a reader, his responses to books and discusses specific goals the child has for reading. It is also a method for monitoring success and identifying problem areas, which may require direct instruction.

Leveled Books: Student's reading below grade level should be reading books at their instructional level. Books can be matched to the student's reading level using a variety of methods or systems. Book level equivalency charts can be found in a variety of sources. Individual schools or districts identify and label leveled books in different ways.

Fountas and Pinnell-1966.

Guided Reading: The teacher works with a small group of students who are at about the same level in reading ability. The teacher selects and introduces new books and supports children reading the whole text to themselves, making teaching points and providing mini lessons during and after the reading. The process of the group varies with the student's developmental stage as well as the supports and challenges of the text.

Components of a Balanced Literacy Program

Research and comparison of a variety of instructional practices have shown that at risk reader's benefit from systematic, explicit instruction.

Instruction should be part of a balanced and language rich curriculum that includes:

1. Daily exposure to a variety of quality independent and instructional level reading materials of different styles.
2. Vocabulary development that explores word type and meaning.
3. Frequent opportunities for students to engage in meaningful reading and writing activities.
4. Comprehension strategies that enhance the student's knowledge and understanding of the text.
5. Development of oral language skills.
6. Word study that explores word parts for both decoding and encoding.

Developing Phonemic Awareness Skills

Faced with the alphabetic script, children's levels of phonemic awareness on entering school may be the single most powerful determinant of their success or failure in learning to read. Marilyn Jager Adams (1990)

Research clearly shows that phonemic awareness can be developed through instruction and, furthermore, that doing so significantly accelerates children's subsequent reading and writing achievement. Ball and Blachman, 1995

1. Phonemic awareness is an awareness of sounds in spoken, not written language.
2. Phonemic awareness recognizes that speech is made up of a series of individual sounds.
3. Phonemic awareness precedes phonics.
4. Phonemic awareness is the child's ability to "play" with sounds and the gradual development of auditory skills.

Levels of Phonemic Awareness

1. Rhyme production
2. Rhyme identification
3. Blending and phoneme isolation
4. Segmenting words into phonemes
5. Phoneme manipulation

Basic Phonemic Awareness Skills

Rhyme Production

1. Reciting nursery rhymes and playing with sounds demonstrates a child's ear for the sounds in words.

Rhyme and Alliteration

1. Producing, categorizing and judging rhyming and alliterative words, recognizing similarities and differences in words based on beginning, middle and ending sounds.

Rhyming: Tell me as many words you can think of that rhyme with the word *can*.

Word to word matching: Do *pan* and *pat* begin with the same sound?

Odd word out: Which word starts with a different sound? *Ball, man, bat or big?*

Blending and Phoneme Isolation

1. Blending individual phonemes into words or breaking off the first phoneme of the word.

Blending: What word would you have if you put these sounds together?

/p/ /i/ /n/?

Phoneme isolation: What is the **first** sound in *pan*?

Segmentation

1. Tapping out, counting the number of sounds, or stating the sounds heard in words

Phoneme segmentation: What sounds do you hear in the word Bat?

Phoneme counting: How many sounds do you hear in the word bike?

Phoneme Manipulation

1. Adding, deleting, and moving phonemes to produce a new word.

Deleting phonemes: Say the word ball without the /b/.

Moving phonemes: Say the word pan but put the /t/ sound at the end of the word.

Phonemic Awareness Support Programs

Earobics Computer Program: Computed based program that offers individualized instruction of phonemic awareness skills. Level I and level II. Cognitive Concepts 1-847-328-8099

Phonological Zoo: Is a program designed to enhance the phonological awareness of children who are in the early stages of reading acquisition. It is a kindergarten program that supports the total classroom based language arts program. It is based upon quality literature selections that serve as a springboard for explicit instruction in rhyming, segmentation and sound/symbol correspondence. Kendall/HuntPublishing Co.

Phonemic Awareness in Young Children - Marilyn Jager Adams

A classroom curriculum that sets the foundation for daily and weekly phonemic awareness activities in the kindergarten and first grade classroom. Paul H. Brookes Publishing Co.

Irresistible Sound-Matching Sheets and Lessons That Build Phonemic Awareness, Wagstaff, Janiel, Scholastic, 2001.

The Phonological Awareness Companion-Making the Speech-Print Connection, The Wellington County Board of Education, Linguisystems, 1995.

Phonemic Awareness-Playing With Sounds to Strengthen Beginning Reading Skills, Creative Teaching Press, 1997.

Sound Abound-Multisensory Phonological Awareness, Teachworth, Linguisystems, 2001.

Literacy Skills and Strategies

Sight Word Recognition and Word Study: There are many techniques available to assist at risk learners in the area of word recognition and word study. The following are a list of highly successful strategies and techniques used within Northville Public Schools.

Sandwiching Technique: Determine what letters, sounds or sight words the student knows and which he/she does not. Place “knowns” in one bag and “unknowns” in another. Begin by taking out 3-4 “known” from the pile and 1-2 “unknowns” from the other pile. Blend in the “unknowns” with the “known”. Work on recognition both receptively and expressively. As the student learns the “unknowns” place them into the “known” bag.

Multisensory Tools: Have the student use a variety of materials to help remember sight words.

1. Writing in sand/shaving cream/salt
2. Sky writing
3. Magnetic letters
4. Bumpy writing (needlework square)
5. Pull apart licorice, Wicky Sticks, pipe cleaners
6. Gel pens and black paper
7. Wipe off boards and chalkboards
8. Visual memory folder
9. Rainbow words
10. Water pens on chalkboards or paper
11. Memory game with sight words

Pocket Words: Write the words that the student is practicing on small cards. The student places these cards into his/her pocket and throughout the day the teacher, peers or other staff members ask the student to read their words. This offers consistent and continual practice.

Word Wall: Teacher lists new words up on the classroom wall under the letter of the alphabet. Students can refer to these words throughout the day.

Red Words: Orton-Gillingham method uses the term “red words” to indicate sight words that cannot be sounded out.

Making Words: A manipulative, multilevel activity that increases word knowledge, discovery of word patterns and reading skills. Students use letters to make words, beginning with two letter words and continuing with three, four and five letter words (and even bigger words) until the final word is made.

Vocabulary Comprehension

Alpha boxes: This strategy helps students to reflect on what they have read and pushes them to expand their vocabulary. The student is given a grid with 26 letters of the alphabet, students work together to find words for each box that relate to the content of the reading selection. These words can be found in the text or from their own word banks.

Word Search: Prior to reading the student is given a sticky note and asked to look through a predetermined number of pages or paragraphs and write down on the sticky note any words they:

1. Cannot read or pronounce
2. Do not know what it means
3. Think someone else may not know or that they are proud they know

Word Map: A vocabulary word is chosen and then the student works independently or with a partner to find its meaning, write a new sentence with that word in the sentence, find synonyms and draw a picture illustrating the word.

Lansdown cards: Students are given index cards with a vocabulary word printed on one. The student is to:

1. Locate the word and write the sentence from the text
2. Write down the definition of the word (in own words or from dictionary)
3. Write their own sentence
4. Illustrate the word

It is the student's job to teach the rest of the group this vocabulary word.

Who has...? I have.....: Vocabulary words are written on index cards and on alternating cards their definitions are written. Each student randomly receives 1 vocabulary card and 1 definition card. One student starts out by saying “Who has _____?” and the student who has the definition replies “I have (and states the definition)” this can move quickly and after all words are finished mix the cards up and start over.

Word Theatre: Children dramatize the words in partners much like the game of Charades. The students can locate a word from text and then work quickly to demonstrate it.

Comprehension

Before Reading Strategies

Prior knowledge: What knowledge does the student bring to the book being read? Does the student have any previous knowledge or information about this subject?

1. Has the student read any other book about this topic?
2. Has the student seen a movie, read a magazine or seen a television show about this topic?
3. Has the student read another book in this series?
4. What information can the student share about the title, cover picture or other?

Word predictions: Ask the student to make predictions of the type of vocabulary they may find in this book based on the cover and title. List these words and have a discussion about them.

Predictions: Have the student make a prediction about what they think will happen in the story. Have the students write these on cards and post them for discussion throughout the book. As the student reads the book have them change their predictions based on the current information in the book. Good readers are always making changes to their predictions.

During Reading Strategies

Read-cover-remember-retell: Read as much as your hand can cover visualizing the information. Cover it up and then retell what was just read.

Reciprocal teaching: Students take turns leading the group in discussion based on a list of questions or statements.

Card #1 "Please get ready to read to _____"

Card #2 "I predict that _____"

Card #3 "Does anyone else have a prediction?"

Card #4 "Are there any words you thought were interesting or you had questions about?"

Card #5 "Are there any ideas you thought were interesting or you had questions about?"

Card #6 "Who will ask a question for this part of the reading?"

Card #7 "This section of the reading was about _____"

Card #8 Does anyone want to add to my summary?"

After the last card has been read and responded to, the card set is passed to the new leader and the reading continues.

Making connections: small group or whole group discussion about various types of connections we make as we read. These responses can be oral or written.

Verbal responses may include:

1. "That reminds me of ..."
2. "I have a connection..."
3. "Remember when..."

Written responses (placed on a sticky note within the text) may include:

1. R -- (reminds me of)
2. T—S (text to self connection)
3. T—T (text to text connection)
4. T—W (text to world connection)

Questioning cubes: Make a square cube and place “wh” question markers or higher level thinking markers on a cube. After a story or page has been read have the student’s take turns throwing the cube and making up a question using the marker rolled. The rest of the group answers the question.

Questioning: Verbal or written responses

1. “I wonder...”
2. “How come...”
3. “Why...”
4. “I’m confused...”
5. “I don’t get it...”
6. Any unanswered question about what was read

Visualizing

1. Discussion about how words in the text make pictures in the mind
2. “I get a picture in my mind of...”
3. “I visualized...”

Sketch to stretch: Students fold paper into four parts. As the teacher reads aloud, kids draw the movie in their mind, a different frame in each quadrant.

Very Important Points V.I.P.: Give student’s fringed self-stick removable post it notes. The students place individual strips at key points along the page. They can stop at the end of each page or reading selection to evaluate what they have marked. As they find new V.I.P.’s they have to weigh them against those they have already chosen. Are these new points as important as what has come before? Are they more important? Some choices have to be made. At the end of the reading the student should be able to summarize their reading by reviewing the VERY IMPORTANT POINTS they have marked.

After Reading Strategies

Retelling Stories: Have students orally retell or write a retelling about the story or information just read. Share with a partner or teacher.

Go Chart: The GO! Chart is a graphic organizer that helps teachers to bridge the concrete, contextualized understanding and retelling of a story with deeper understanding and comprehension.

Predictions	Vocabulary	I noticed . . .	I wonder . . .	Connections	Retelling

Fluency

Rereading: Rereading a passage helps to improve the fluency of the reading. Students can chart their own progress in fluency.

Chunking: The student reads a passage focusing on how words are combined to form “units of thought” and how thoughts are combined to form sentences, passages, and complete text. This skill is basic to developing comprehension and fluent and flexible reading habits.

Resources

A Basic Guide to Understanding, Assessing and Teaching Phonological Awareness, Joseph Torgesen and Patricia Mathes, Pro-Ed, 2000.

Comprehension Strategies Grades 2-5 (video tape and book), Susan Finney, Bureau of Education and Research.

Guided Reading, Fountas and Pinnell, Heineman, 1996.

Making Words; Multilevel, Hands-on Phonics and Spelling Activities, Patricia Cunningham and Dorothy Hall, Frank Schaffer Publications, 1997.

Mosaic of Thought-Teaching Reading in a Reader's Workshop, Ellin Oliver Keene and Susan Zimmerman, Heinemann, 1997.

Phonemic Awareness in Young Children, Marilyn Jager Adams, Brookes Publishing Co., 1998.

Strategies That Work-Teaching Comprehension to Enhance Understanding, Stephanie Harvey and Anne Goudvis, Stenhouse Publishers, 2000.

Vocabulary Strategies Grades 2-6 (videotapes and book), Bureau of Education and Research.

Numeracy

Children develop number sense early on through everyday experiences. The more play activities related to numbers and patterns in daily activities the better foundation a child has for learning mathematics in school. Pre-school and Kindergarten children come to school with some understanding of numbers and counting. The early years of school are important for helping students develop conceptual knowledge of numbers along with the related procedural skills of counting, recognizing, and writing numerals. The procedural skills are the tools children use to refine their conceptual understanding of numbers (McLeod, 2001).

Children need to learn how to solve problems in life before they can solve problems on paper. Using pictures, words, and symbols can help develop number sense and can begin the important process of understanding and modeling relationships. The fast paced world that we live in does not always promote the activities that can build number sense. Children seldom help in the kitchen with cooking, reading and measuring ingredients, baking along side mom, dad or grandma. We are a microwave and fast food society and have taken away many great opportunities for children to learn. Playing with blocks, making patterns with beads, designing a fort out of Lincoln logs and then building it, sorting the silverware and laundry and then putting it away are activities that many children do not experience.

A four-year-old gave a great example of how number sense can be developed and taught early on at the breakfast table. Riley and his dad were making pancakes from scratch as they often do. Riley was helping get the ingredients out, measuring, pouring, and mixing. He then proceeded to set the table and take out the margarine and syrup. When his dad put his pancakes on his plate, Riley asked to play the pancake game. After the pancakes on his plate were in pieces, Riley counted the pieces, 15 total. His dad proceeded to ask him questions such as, "If you have fifteen pieces and eat three, how many will you have?" The game continued until all the pieces were gone and the bellies were full.

Mathematical skills are developed in sequence. It is difficult to develop advanced mathematical thinking without a foundation of basic skills. The following sequence of development ensures that children can reach the point of automaticity with addition facts.

1. *Comparison of groups of objects to identify the relationship of more, less than, or the same number using visual skills rather than counting;*
 2. *Rote counting to list counting words in order;*
 3. *Point counting, using one to one matching to count a group of objects;*
 4. *Writing and recognizing numerals;*
 5. *Building number relationships, such as 5 is 1 more than 4 and 1 less than 6, and part-part-whole relationships, such as 6 may be thought of as a group of 2 and a group of 4 or two groups of 3;*
 6. *Naming the number of objects in patterned arrangements without counting, i.e.; naming the number of dots on a dice without counting them;*
 7. *Understanding the number 10 as a benchmark number since it is the basis of the decimal place-value system;*
 8. *Understanding the operation of addition as joining two groups to find how many in all;*
 9. *Developing strategies that can be done mentally and quickly to help children retrieve facts;*
 10. *Understanding and using the order property to reduce the number of facts to be memorized.*
- (McLeod, Preventing Early Learning Failure, 2001)*

Learning research tells us that making learning relevant and linking it to prior knowledge is a crucial strategy in teaching any concept (Jensen, 1998). Children need to master the early concepts before moving on to the higher level thinking concepts. We are seeing many students at the fourth and fifth grade levels struggling with math because they don't have a good foundation of number sense. Students will not make continuous progress without mastering earlier concepts. Instructional practices can make the difference for how students will view mathematics for the rest of their lives.

The following pages are examples of strategies implemented in a variety of ways throughout Northville elementary schools.

Games That Promote Number Sense

1. Board games – any board game that uses dice and counts spaces on a board is good practice for young learners. When they can automatically recognize the patterns on the dice instead of counting each dot they have made progress with number sense and are beginning to recognize number patterns.
2. Dice games – dice can be used for many numeracy activities! Soft foamy dice, or even dice folded from card stock are nice because they aren't so loud and they don't slide across tables and desks as easily! Students can practice recognizing the dot patterns by repeatedly rolling 1 dice and saying the number as fast as possible until it is quick and automatic. With two dice students can add, subtract or multiply the numbers for practice with basic facts. Students can pick the smallest number of the two dice, or the largest number. Concepts of more and less can be practiced with dice.
3. Bingo games (Quizmo) – addition, subtraction, multiplication and division bingo games can be bought or easily made to be played as a class or small group to reinforce quick recall of basic facts.
4. Flash cards – flash cards can easily be turned into games for students. Any board game can be used as the playing board and students can draw flash cards to answer in order to move along the path towards the finish.
5. Shut The Box Game – this game requires basic adding skills and gives students practice recognizing number families. When players roll the dice they must “shut” the answer. If their total is eleven, players can “shut” any combination of numbers that equals eleven. Whoever can “shut” all of their numbers wins. Most students will end up with numbers left because they have already “shut” the numbers that they need.
6. Fact Ball Catch – tossing a ball around the classroom with math facts on it is a fun, motivating activity that promotes quick recall of basic facts. When catching the ball, students must answer the problem that their right thumb is touching and then pass to another student.
7. Math Wrap-Ups – this fun activity is an individual game that requires the student to wrap a string around a plastic stick that has facts and answers on it. They are self-checking, as the string will make a pattern if done correctly.
8. Memory or Concentration Math – this popular game is easily made with cards and math facts. Students must find the answer to the fact on the opposite card turned over.

Movement Activities to Promote Number Sense

1. Koosh Ball Math – toss a Koosh Ball or bean bag back and forth while counting. Count by 2's, 5's ... Skip count while throwing, count backwards or answer facts that your partner asks as you play catch. This activity can be enhanced by having students play while balancing on a balance board or on one foot.
2. Trampoline Math – students practice counting while jumping on a trampoline. Students can count forwards, backwards, skip count or practice basic facts while jumping. Add to the difficulty and skill building by having students jump on one foot, do jumping jacks or half-jacks, or clap and turn while counting.
3. Sand and Shaving Cream Facts – have students practice writing their numbers and facts in sand or shaving cream for a multisensory experience.
4. Tangrams – shape games are fun and promote visual and spatial awareness.
5. Target Toss – toss bean bags at a target with numbers on it to review basic facts.
6. Math Music Tapes – have students dance or clap to music tapes with math facts on it – “multiplication rap”
7. Stepping Stones – students walk on numbers and facts on the floor. Tape, carpet squares or mats with numbers on them work well. “Step to an even number, walk backwards to a number less than twenty, when the music stops give me a number sentence that uses the number that you are standing on...”
8. Math Trains – give students numbers on cards or stickers and ask them to form a train in ascending or descending order, or skip count in a line. Have a student be the engineer and he needs to pick up cars (students with numbers) with factors of his number.
9. Musical Math – students make music chanting math facts using tambourines, maracas, or other instruments.

Classroom Ideas to Promote Number Sense

1. Math Baskets – have a basket of math games and independent activities available for free time or transition time at a designated spot in the room
2. Block Area – have a designated area for block design and play
3. Make math games and puzzles available for indoor recess
4. Sorting Centers – have objects available at a center that can be sorted, counted and manipulated
5. Home Ideas – send ideas home in newsletters for follow up on new concepts. Suggest creative ideas for reinforcing basic facts at home, suggest cooking and measuring activities. Have a weekly math activity in your newsletter.
6. Parent Helpers – ask parents for donations of beans, noodles and other objects to sort and count at school. Ask parents to volunteer to do some cooking/measuring activities in school.
7. Calendar Math – use calendar time to reinforce numbers and counting. Estimate days until the next day off, count down until Halloween, highlight the even numbers in the month...
8. School Day Tally – keep track of the days in school on the walls of your classroom. Highlight every tenth day and count together on a daily basis. Celebrate every tenth day with a treat. Have a 100th day of school celebration and have students count and sort 100 small items to bring to school that day for display or for a food “gorp” or mix!
9. Measure Up! – measure students growth at each report card marking and keep track with a measuring tape to take home at the end of school.
10. Touch Math – use this concrete, strategic program to help struggling students with addition and subtraction.

Numeracy Strategies Using the Abacus

A traditional abacus is usually made of wood or plastic with rows of beads in groups of ten per row. This type of abacus has 100 beads in 10 rows. An abacus is a great tool to use while teaching number sense and numeracy. It is concrete, hands-on, organized and contained with the beads all attached. An abacus can increase number awareness, help a child demonstrate a concept such as +, -, x, and help children internalize an awareness of basic number facts. An abacus can be made from a coat hanger or pipe cleaner and 20 beads in colored groups of 5.

1. Pre-teaching – when first introducing the Abacus to a student, talk about the look of the abacus and the beads counting as one... Tell students that “erase” means to slide all your beads to one side. It’s best to work from left to right when “showing” numbers or amounts of beads. *Don’t tell students that each row has ten beads – let them figure this out as you go!
2. “Show Me” strategies – have students show you sets of beads for numbers less than ten, working up to twenty. At first expect students to count out each bead. When they automatically push over five or ten at a time it’s time to move on. Ask students to show me one more or one less and then say the total amount. Practice with “more” and “less” beads.
3. Base ten practice – when students are comfortably moving groups of beads instead of counting each, move on to practice with five and ten beads at a time. Ask students to show you ten, then twenty, thirty and so on. When this is automatic ask students to show you five then ten, fifteen, twenty and so on. When this is simple ask for variations of fives and tens.
4. Card games – when students have a good understanding of the Abacus and some basic number sense (not counting each bead anymore) groups of students can play card games with their Abacus. Have students each draw a card with a number on it and show that number on their Abacus. Then ask groups of students to place their Abacus in ascending or descending order on the table. This can be a contest or race, or it can be an individual activity. Question students on who had the biggest number or the number in the middle or the least amount...
5. Addition and Subtraction practice – when good number sense is established students can use the Abacus to add and subtract. This can be done verbally in a one-on-one situation or with worksheets and partner work. Students show their problem on the Abacus – starting with sums under ten so students are using only one line of beads to begin with, and moving on to two-digit answers. The same

would be true for subtraction: start with answers less than ten and move on when appropriate.

6. Money Practice – begin by simply showing the worth of coins on the Abacus to reinforce that knowledge: “show me how much a quarter is worth.” When students have this committed to memory, ask them to then “add a dime to that amount” then ask, “now how much money is a quarter and dime worth together?”

A classroom supply of the abacus to teach concepts to the class is a wonderful resource. The support teacher can be used to help teach these concepts.

References

Jensen, E. (1998). *Teaching With The Brain in Mind*. Alexandria, VA: Association for Supervision and Curriculum Development.

McLeod, J. (2001). Chapter 3, “Building Early Numeracy Skills,” from *Preventing Early Learning Failure*, R. Sornson, 2001.

National Council of Teachers of Mathematics (2000). *Principles and Standards for School Mathematics*. Reston, VA: Author.

Motor Skill Development

How Motor Skills Develop and the Connection to Learning

Many children come to school today without the necessary skills to be successful within the classroom. They often lack the developmental motor skills needed for academic success. Children naturally develop gross, fine, and visual motor skills early on in life, if they are exposed to many experiences which enhance development. They need to spend many hours using their large muscles and just as many hours cutting, coloring, drawing, playing with puzzles, clay, etc., in order to develop fine motor and near point visual skills. There are often roadblocks on the path to optimal development. Birth trauma, fever, chronic ear infections, allergy, poor diet, inactive lifestyles, or too much video entertainment time may contribute to less than optimal experiences (Sornson, 2001).

We are a fortunate society in many ways. Unfortunately, children spend less time engaged in gross and fine motor activities today. Many children have difficulty maintaining attention to a task. It is amazing how many children do not know how to play. Play helps stitch individuals into the social fabric that is the staging ground for their lives. Through play we can grow brilliant, creative, healthy brains. Many experienced teachers can walk into a classroom and pick out the students who may struggle academically. These students are at-risk of early school failure if they do not have basic balance, bilateral motor, visual motor, laterality, directionality, and body awareness skills. These skills, in addition to language skills and behavior skills, lay the foundation for early school success (Sornson, 2001). Motor skills can be enhanced especially during the early years. It is important to recognize that students need to have the necessary motor and visual skills in place before they can be successful in learning reading and mathematics.

Sensory, Motor and Cognitive Skill Progression in the Early Years

Adequate Balance

Gross Motor Skills, including bilateral motor skills

Visual-Motor and Fine-Motor skills

Near point Visual Skills

Visualization and Visual Memory

Optimal Readiness for Reading,

Writing, Spelling and Mathematics.

(Sornson, The 30-Minute Motor Skills Development Plan, 2001)

Incorporating movement into teaching an academic skill has proven to be very effective for many of our students. Many students need to have more hands-on sensory experiences to improve their motor development skills, retain information, and have fun in the learning process. Purposeful movement will help students who need to move be more successful within the classroom environment. Students who appear active in the classroom are often moving in order to help their brains focus.

The strategy pages that follow are ideas that can be used in a variety of ways. Not all strategies may be appropriate for use within the classroom; some activities are more appropriate for small group and one on one instruction. The focus areas are based on a hierarchy of skills. For example, a child with balance issues should not be expected to walk heel to toe on a balance beam with a bean bag on his head until he can walk heel to toe on the floor. These strategies will benefit children with normal skills and mild motor delays.

1. *Body Image
2. *Bilateral Motor
3. *Laterality/Directionality
4. *Balance (Static & Dynamic)
5. *Visual Motor Coordination
6. *Transition Activities
7. *Enhancing Academics Through Movement
8. *Gross and Fine Motor Programs that Work

Body Image

Children need to learn to copy movements, patterns of movements, and rhythms.

1. Have children copy your movements (mirroring). As children progress increase the number of movements.

Examples:

1. hand movements
2. body part identity movements
3. clapping, stomping, rhythms
4. movement sequencing – hop, tiptoe, roll

Classroom Direction Game –

The teacher calls out an object and the children move to touch that object. Then, call out another object; the child must touch the first object and then the second. See how many objects they can remember to touch.

Bilateral Motor

Using the right and left sides of the body together help children coordinate both sides of the brain. Children develop bilateral motor skills as they learn to crawl, walk smoothly, cross midline with hands or feet, catch and throw balls, skip, march and swing. Children who have difficulty with bilateral skills may look awkward or clumsy, struggle with near point vision, hand eye activities, visual memory and social skills. The children who have these skills are better prepared for school success in the early grades.

Examples:

1. have children walk on right and left footprints crossing their midline
2. crossing the midline (the middle of the body)
3. skywriting
4. hook ups (put your arms together and miss a clap, connect your hands, bring your arms and hands into your chest, cross your legs, close your eyes, touch your tongue to the roof of your mouth, concentrate on your breathing).
5. draw lazy eights in the air (side-ways eights)
6. marching or skipping up and down the hallways
7. jumping jacks

<i>Laterality/Directionality</i>

Some children have difficulty knowing where their bodies are in space. They may bump into the wall or objects or have difficulty catching/throwing a ball to a specific area or place. Spatial language includes: up, down, high, low, near, far, behind, next to, forwards, backwards, between, and left and right.

Activities to develop laterality/directionality

1. Hokey Pokey
2. Simon Says (point to your left ear)
3. draw different body parts on a blank body outline
4. have 2 children connect palm-to-palm and mirror- image movements
5. touch body parts to objects
6. have children close eyes and call out, "lift your right arm, and put your left arm under your head, etc.
7. bop a balloon around the room using different body parts
8. ask children to move in relation to objects in the room (stand between the desk and chair)
9. obstacle course in which children move over, on, through, between, and under equipment
10. use an object like a pencil and ask children to place the pencil (between two fingers, on top of head, etc.)
11. walking, hopping, skipping forward/backwards/sideways
12. bop a balloon or beach ball around the room in different directions

Alphabet Game

This activity can be used with individuals or small groups.

Write the letters of the alphabet on the chalkboard (or on a piece of butcher paper if you want it to be permanent). Underneath each letter, randomly write the letter L, R, or B. L stands for left, R stands for right, and B stands for left and right. The teacher calls out a letter and the child has to visually find the letter and then extend the correct arm to the side.

A	B	C	D	E	F	G	H	I	J	K	L	M
L	L	R	B	R	B	L	B	R	R	L	R	B

If the letter "C" is called, the child extends his/her right arm to the side.

Hot Potato with a ball-

The idea of this game is that the ball is hot and it must be moving all the time.

Sit in a large circle. Roll a ball toward the center. Children bat the ball using the body part you name (ex. left foot only). Challenge: use 2, 3, 4, 5 balls of different sizes at one time.

Balance

The ability to balance is essential to most types of complex movement. Children need to have balance in order to perform such simple movements as, sitting in a chair, standing and walking. Two kinds of balance are static and dynamic. Static balance is maintaining one's balance while stationary. In dynamic balance, one maintains his/her balance while moving.

Activities to develop balance

Static

1. stand on one foot with eyes opened then closed
2. balance on two parts of your body (vary # of parts)
3. put a piece of paper on head while sitting then stand up
4. balance pencil on finger
5. squat with arm extended
6. stand on tiptoes or heels
7. stand balancing an object on head/hands (try one foot)
8. balance on a balance board (place beanbag on head/hands)
9. handstand
10. catch ball while on balance board
11. sitting on a partially blown up beach ball

Dynamic

1. walk forwards/backwards/sideways on line
2. walk heel to toe forwards/backwards on line
3. walk forwards/backwards/sideways on balance beam
4. walk heel to toe on balance beam
5. walk heel to toe on balance beam with beanbag on head/hands
6. walk on stepping stones (dome like circles)
7. hopping

***Visual Motor
Coordination***

This is the ability to coordinate the visual and motor systems. Children who practice using their hands and eyes together develop the ability to accurately respond to visual information, create pictures in their minds, use visual memory, and develop near point visual skills. Development of visual-motor coordination contributes to optimal readiness for reading, writing, spelling, and mathematics.

Activities to Develop Visual Motor Coordination

1. sit with legs straddled and roll the ball back and forth to partner
2. stand and roll ball to partner/bounce ball to partner
3. roll ball at wall/bounce ball at wall and catch
4. roll ball through chair legs
5. jump back and forth over a ball
6. bowling with 2 liter bottles
7. throw beanbag at a target or into a box
8. dribbling forwards/backwards/around cones
9. walk in a circle around ball while dribbling
10. draw lazy eights in the air, on paper, or a partners back/ walk or skip eight on the floor
11. toss a koosh ball back to the teacher or peer after answering a question
12. puzzles, Lego's, blocks, drawing, coloring, cutting and tracing

Circle Toss-

Form a circle of approximately ten players. One player throws the ball to someone in the circle. He/she then tosses it to someone else. This continues until each person has received the ball. The last person tosses the ball back to the first person. The pattern is repeated again. Challenge: Add more than one ball.

Transition Activities

Great activities for transitioning from subject to subject or class to class.

Examples:

1. Follow the leader
2. Dancing to music
3. Walking, skipping, galloping
4. Stirring a cake as you walk down the hallway
5. Touching head and shoulders in rhythm while walking
6. Touch your head while rubbing your belly
7. Rolling your arms while walking
8. Walk with a bean bag on head or back of hand
9. Stand by desk and do hop-outs (half jumping jacks)

Enhancing Academics Through Movement

Team Spelling-

You will need a set of letter tiles for each group. Divide children into groups or teams. The children line up relay style. Place the tiles at the opposite end of the children face-up spread out. The teacher pronounces a spelling word. The team chants the first letter in the words while the first child on each team skips down to the other end to retrieve the correct letter. Then he/she skips back and places the letter on the floor by his/her team. The second player then does the same for the second letter in the word, and so on. The game continues until each team has spelled the word.

Spelling Twister-

Equipment: Poster boards with slits cut into them to fit 3x5 cards, blank game spinner, 3x5 cards with spelling words written on them.

Place the 3x5 cards with words into slits on poster board. Prepare the spinner by dividing it into eight sections and writing one spelling word per section. Next, label each quarter section of the spinner circle with RF, LF, LH, RH (right foot, left foot, left hand, and right hand). Divide children into teams and give each team a poster board. Spin the spinner and call out the body part and word (right foot-boy).

*Begin each or every other lesson with flashcards. Divide the cards in half, pair up the students and flash each other the pack, then switch with other pair (do this especially if your lesson isn't using words).

1. March in place while reading flash cards
2. Stand on one foot
3. Stand in a hook-up

Twister

ABC, season and shape mat

Students follow directions (e.g.: put your left foot on a shape, put right hand on a number, put your right foot on a letter...). Continue until one student falls. Begin game again.

Balance Beam: – Students must do these activities several times don't let them on the beam until previous student steps off.

1. Flash sight words first as the student balances on beam
2. Walk slowly, heel-toe on the beam with head up (try not to look at feet).
3. Walk side-step (arch-to-arch, head up)
4. Walk backwards, slowly, heel-toe
5. Walk stepping over obstacles on the beam (cards, bean bags...) Try forward and side-stepping
6. Balance a bean bag on your head or on your hand
7. Walk tiptoe forward and/or backward

Skywriting: Practice words by writing in air.

Use big arm movements, put opposite hand on shoulder, and keep arm straight as student forms each letter of the word.

Write on Backs: Using index finger, write a word on a partners back, have them guess the word.

Word Squares: Large blue paper with words inside squares.

Students stand on balance board and toss beanbags at words that you give a clue about

1. this word has a small word in the middle of it
2. this word rhymes with...
3. this word has a silent letter at the beginning

Stepping-stones: Line up stones

1. Students walk one at a time on the stones trying not to fall off
2. Walk forward, then backward, then crossing over legs, then with eyes closed.
3. Balance a beanbag on head
4. Spell a word as they step on the stones

Sand writing/Magnet letters

1. Practice writing words with sand or magnets

Trampoline Spelling: All activities can be done spelling sight words.

1. Jump
2. Do half-jacks
3. Toe raises
4. Run in place
5. Arm circles while jumping
6. Jump and clap
7. Play catch while bouncing

Balance Boards: Students stay balanced on boards while tossing a beach ball, beanbag, or Koosh ball to a partner and spelling a word

Relays: Hop, skip and gallop to a designated spot, reading sight-words

Tap and Spell: Tap a body part while spelling

1. Tap up or down an arm, leg
2. Tap to a beat and spell

<p style="text-align: center;"><i>Gross and Fine Motor Programs That Work</i></p>
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1. **Motor Skill Classes:** Classes taught by a support teacher. Whole group programs or small group programs focusing on motor skill development related to academic readiness. These classes are usually held at the K-2 level.
2. **Supplemental Reading Program:** Incorporating a gross motor/ visual memory ten-minute session to help increase sight word recognition, tracking, and readiness to learn. This motor component is done within a thirty-minute time frame rotating through a guided reading session, phonics session and motor session (Shirk, Osborne, Hillard, 2000).
3. **Project First Step[®]:** A school wide program, developed by Tom and Cathy Johnson. This program was taught to teachers who incorporate gross and fine motor into their teaching. We also have a weekly hallway activity along with a calendar of ideas for each classroom teacher.
4. **Motor Mom and Dad's Program[®]:** A program developed by Nancy Sornson. Uses parent volunteers to run a motor program two to three times a week. The program takes place in the hallway or a separate room. The entire class rotates through stations that focus on motor skills directly related to learning.
5. **Fine Motor Classroom Kits:** Classroom teachers are encouraged to do a variety of fine motor activities within the classroom. Fine motor bins are available to check out through support staff and used within the classroom or center based activities.
6. **Fine Motor Home Kits:** A mother's club grant was written and approved to develop fine motor kits to be used at home. The kits contain directions and all of the material needed to do a variety of fine motor activities.
7. **Peer Motor Program:** Pair an upper elementary student with a lower elementary student to enhance motor skill development and academic skills. For example, throwing a ball back and fourth while balancing on a balance board and skip counting (Chalifoux, 2001).

References

Hannaford, C. (1995). *Smart Moves: Why Learning is not all in your head*. Arlington, VA: Great Ocean Publishers.

Jensen, E. (1998). *Teaching with the brain in mind*. Alexandria, VA: Association for Supervision and Curriculum Development. 800-933-2723.

Sornson, R. (2001). *The 30-minute Motor Skill Development Plan*. Brighton, MI: Early Learning Foundation. 810 229-0148.

Sornson, N. (2000). *Motor Moms and Dads program*. Brighton, MI: Early Learning Foundation.

Johnson, T., & Johnson, C. (1998). *Project First Step*. Gobles, MI: First Step Inc. of Michigan.

Steele, W.L. (1976). *Project Adapt: 2nd year final report*, ESEA, Title III. Washington, DC: U.S. Department of Education.

Landy, J., & Burridge, K. (1999). *Fundamental Motor Skills and Movement Activities for Young Children*. Prentice Hall, Paramus, NJ.

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Fine Motor Development

Fine motor coordination is the ability to control the small muscles of the body and usually involves the ability to coordinate the action of the eyes and hands together in completing manipulative movements.

In general, children show the most improvement in simple fine motor control behaviors from 4-6 years, and more complex behaviors tend to improve gradually from 5 to 12 years. Isolated finger, hand, wrist and foot movements tend to significantly improve from 5 to 8 years. (Landy & Burrige, *Fine Motor Skills and Handwriting Activities for Young Children*, 1999).

Although most children can improve their fine motor skills through informal day to day activities, there are many children that need a specific fine motor program for observable gains to be seen.

There are different ways that we use our hands to complete tasks:

1. bi-manual activities: activities that require the use of two hands working together to complete a task
2. uni-manual activities: single handed tasks
3. graphic activities: those activities that require movement related to drawing and handwriting

Observable Behaviors of Children with Fine Motor Difficulties

1. Poor muscle tone which may affect child's ability to complete activities. Too weak or lack of overall strength.
2. Poor kinesthetic and tactile awareness may prevent accurate feedback. Child may not be able to complete an activity without looking at the task.
3. Motor planning difficulties may affect child's ability to sequence steps in an activity.
4. Visual/perceptual difficulties may affect a child being able to copy items from one paper to another or from the board.
5. Difficulties with speed. Child may not be able to control smooth consistent movements. May be too fast or too slow.
6. Poor grasp. Child may not have the skills to hold scissors, pencil etc..
7. Poor posture: Child may lean onto desk or to one side when completing an activity.
8. Finger isolation: Child cannot isolate and use fingers independently.

Workable Ideas for Including Fine Motor Activities

There are a variety of ways that a teacher can incorporate specific fine motor activities into the classroom/home.

1. Whole class fine motor lessons. If the teacher has enough materials for her entire classroom, the entire class can spend 15-20 minutes 2-3 times per week working on these skills. This works particularly well in lower grades. Group higher needs children with the teacher in a small group so that help can be provided as needed.
2. Small group center based lessons. The teacher can incorporate the fine motor activities into a rotating center. All children can rotate into the center each week or when they have free time.
3. Small group instruction for children needing fine motor skill development. Pull out time is spent working on specific fine motor skills. The child could work with a parent volunteer, teacher assistant or peer tutor.
4. Specific take home kits for parent/child use. These kits can be made up and sent home on a weekly basis. Rotate a variety of kits to keep the child motivated.

Fine Motor Kits for School/Home

A variety of fine motor kits can be made that can be checked out to parents/teachers on a rotating basis.

Note: Winchester Elementary had the Northville Mother's Club make the fine motor kits for them.

1. Create a variety of kits that require different types of hand movement and coordination.
2. Include all materials needed in each kit.
3. Include specific directions for each activity in each kit.
4. Develop a chart so that you know who has each kit checked out and so you can send a different kit each week. (See attached chart—K. Thompson/S. Thompson, Northville Public Schools).

The Kids Can Too! Fine Motor Kit

The "Kid's Can Too" fine motor kit is a compact home program for children who have fine motor coordination problems. The purpose of Kid's Can Too! is to provide a variety of activities and written exercises to be used at home to improve hand dexterity and functional coordination of the hands. Equipment associated with each exercise is labeled and indicated on the exercise program. The Kid's Can Too! kit is recommended for children ages 3 and up. Adult supervision is required while using the kit.

Note: This kit has a variety of activities and tasks included in one format. So instead of doing one similar activity over and over you are having the child complete a variety of skills with much less frequency.

Below you will find a list of some fine motor kit ideas used in Northville Public Schools. Materials needed, directions and explanations are listed for each.

Individual Fine-Motor Kit Suggestions

1. Alphabet tweezer beads
2. Hidden beads
3. Beads in a bottle
4. Puff ball stuff
5. Clothespin pinch
6. Paperclip fun
7. Beaded necklaces
8. Tweezer spelling
9. Let's twist
10. Punch crazy
11. Scissor mazes
12. Tiddly winks
13. Tweezer teasers
14. Wacky weaving

Alphabet Letters With Tweezers

Materials: Small letter cubes, string, tweezers

1. Use the tweezers to pick up the letters needed to make a word.
2. Have your child think of a word or you give them a word/name or sight word.
3. The child uses the tweezers to pick up the correct letters and places them on the table
4. The child then strings the letter cubes onto the string in the correct order.
5. Continue with about five words or for about 15 minutes.

Modification: Write out the words and the child matches the letters.

Beaded Suction Cups

Materials: Assorted colored beads, tweezers, suction cup pad (soap pads), xerox copy of pad, colored pencils/crayons

1. The child places the suction pad with suction cups facing up on the table.
2. Child uses the tweezers to place one bead at a time on each suction cup.
3. After the child is done with the entire pad-he/she can take a xerox copied page and color the spaces in to match their pad.
4. This works well when you have a variety of shape pads to choose from (feet, hands, fish, circles etc...)
5. Child can use their thumb and forefinger to place the beads back into the tub,

Hidden Beads

Materials: Colored clay, colored beads

1. Child/parent hides 10-15 beads in the clay ball.
2. The child/parent passes their ball to the other person and they use their fingers to locate and pull out the lost beads.
3. Count up the beads and return them to the tub.
4. Who can find the most beads in the shortest time period?

Punch Crazy!

Materials: a paper punch with the waste catcher taken off, letters or numbers with large dots drawn on

1. Begin by cutting the letters or numbers on the black lines.
2. Using the hole punch with the dot on top, practice punching on a piece of scrap paper. Practice aiming your punch.
3. Punch out the black dots to make number cards. Count the holes and notice the pattern.
4. Put the letters of your name in order. Punch out the black dots.
5. Using only index finger and thumb, pick up all the dots. Time how long it takes you to pick up. Can you do it in less than one minute?

Let's Twist!

Materials: plastic nuts and bolts, real nuts and bolts, twist ties and cards with holes punched around edges, tops

1. Open the "Let's Twist" container and pour out the contents.
2. Start by using both hands to twist the nut onto and off of the big plastic bolt and then try the smaller plastic bolt.
3. *For a challenge, try twisting using only one hand to hold the bolt and also do the twisting!*
4. Now twist the nut onto and off of the small metal bolts. Use your thumb and index finger to twist the nut.
5. Untie the twist ties, flatten them out, and then re-twist them onto the card.
6. Use the twisting motion to spin your top. Try it with the other hand!
7. Put all the items back in the container and snap the lid back on.

Puncture Proof

Materials: outlines of simple pictures made by making small dots, nails in several sizes

1. Choose one of the dot pictures and put it on top of the foam-board.
2. Select the nail you want to use.
3. Carefully hold the nail between your thumb and index finger.
4. Poke the nail through each dot in the picture.
5. When the picture is completed hold it up to the light and look. Did you make a good design?
6. Be sure to put the nails away safely when you are finished!
7. Enrichment: Make a picture of your own by making holes in a paper.

Pom Pons in a Bottle

Materials: small twist top plastic bottle with a top diameter of about $\frac{3}{4}$ inch, tweezers, pom pons in various sizes, targets

1. Remove the bottle cap.
2. Using the tweezers, pull one pom pon out of the bottle at a time and place on the target.
3. After all pom pons have been removed, count them by moving them off the target one at a time with the tweezers.
4. Complete the activity by replacing the pom pons in the bottle one at a time using the tweezers.
5. Replace the cap.

Beans in the Bottle

Materials: 12 – 16 ounce plastic soda bottles with two or three small X cut into the side, several varieties of dry beans

1. Remove the bottle cap and pour the beans out onto a table.
2. Sort the beans according to size and color using index finger and thumb. Then middle finger and thumb. Ring finger and thumb. Pinky and thumb. To add a competitive edge try seeing how many beans can be sorted in 10 seconds.
3. Replace the bottle cap.
4. Then, using index finger and thumb, push beans one at a time back into the bottle through the marked slots. This is difficult! Good luck.

Scissor Mazes

Materials: construction paper with lines drawn on starting at one edge and spiraling toward the center, or zigzagging toward the center, scissors

1. Decide on the maze you want to do.
2. Use your writing hand to hold the scissors and your other hand to hold the maze.
3. Start at the edge of the maze and cut until you run out of line.
4. Turn your paper as you cut.
5. When you are finished you can hang the finished maze from the ceiling or door for a special decoration.

You may keep your completed picture at home.

Paperclip Point

Materials: tag board cards with letters or numbers written along the edges, paperclips

1. Place a paperclip on the edge of the card where the number 1 is and then continue putting paperclips on in number order. Take all the paper clips off when you are finished.
2. Use the ABC card and put paperclips around the edge in ABC order.
3. Spell your name by putting paperclips along the edge in order of your name.
4. Make a paperclip chain. How many paperclips does it take to make a chain as long as your hand? Foot? Arm?
5. Take the chain apart!

Tiddly Winks

Materials: target, several small plastic disks and a larger disk

1. Place the target on the floor and position yourself on the floor a foot or two away from the target.
2. Hold the large disk between your thumb and index finger. Press it on a smaller disk that is on the floor until it slips off the edge. The small disk will flip through the air.
3. See where your first Tiddly Wink landed. Then reposition yourself and refine your pressure so that you can hit the target. Try for higher points.
4. Play with a friend, taking turns.
5. Always clean up all the Tiddly Winks when you are finished.

Activities to Develop Fine Motor Skills

1. Place paper clips on the edge of an index card.
2. Place clothespins around the edge of a box.
3. Roll dice in a cupped hand.
4. Play "jacks" and roll "jacks" in your cupped hand before tossing.
5. Manipulate a tape dispenser.
6. Play "pick up" sticks.
7. Make designs with small rubber stamps.
8. Complete patterns with pennies.
9. Complete coffee stirrer patterns.
10. Search for magnetic letters in a bag with your eyes closed.
11. Draw patterns on a chalkboard with a tiny piece of chalk.
12. Erase chalk patterns with a tiny piece of wet sponge.
13. Stack poker chips with your eyes closed.
14. Make design patterns in sugar or salt with your fingertips.
15. Make pipe cleaner letters or numbers.
16. Make play dough letters or numbers.
17. Make "rubblings" of an object under paper with the side of a crayon.
18. Punch a hole pattern in cardboard with a hole punch and lace it.
19. Pushpin art (following a pattern).
20. Color snow with a squirt bottle and colored water.
21. Tweezer or tong games (how many jingle bells can you pick up in 10 seconds?).
22. How many cotton balls can you pick up in 10 seconds (which are you better at?).
23. Find hidden beads in a chunk of playdough.
24. Remove a twist cap using only one hand.
25. Turn over 20 pennies as fast as you can.
26. Twist screws into wood with a screwdriver.
27. Hammer wooden golf tees into Styrofoam with a hammer.
28. Seal zip loc bags with your fingertips.

29. Practice using twist ties.
30. Open and close safety pins to make a bracelet.
31. String beads on a large safety pin for a friendship pin.
32. Tear papers with your fingertips and make a collage.
33. Take coins out of a coin purse with your fingertips.
34. Crumble paper with only one hand.
35. How many paper clips can you pick up and hold in one hand?
36. Thread a needle.
37. Make play dough peas with your fingertips.
38. String cut up straws.
39. Drop colored water onto coffee filter with an eyedropper.
40. Make designs with various sizes of buttons.
41. Walk your finger up and down a pencil without dropping it.
42. Pick up fragile objects with tweezers.

All of the above fine motor activities will help to enhance in-hand manipulation skills and skilled hand use. Skilled hand use is important in the development of legible handwriting (accuracy, fluidity, and speed). "Good" handwriting is not just the product of a "good" pencil grasp.

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Thornton Creek's Fine-Motor Activities

<i>Title</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>
Beans in a Bottle								
Braiding								
Crayola								
Clothes Pin Pinch								
Dot Pictures								
JAX								
Let's Twist								
Linking Cubes and Triangles								
Loving to Lace								
Paperclip Point								
Peg Boards								
Pick-Up Sticks/Snakes								
Pom Poms in a Bottle								
Punch Crazy								
Puncture Proof								
Scissor Mazes								
Tiddly Winks								
Tracing Mazes								
Tweezer Teasers								
Wacky Weaving								
Water Color								
Water Fun								

Name: _____

Visual Memory

Visualization and visual memory are necessary for quick recognition of letters, numbers and words. Sadly, more children are coming to school with poorly developed visual memory skills. These children are at-risk of frustration and failure in early learning. The good news is that most children with visual memory deficits respond to quality instruction, and with practice improve this important skill.

Strategies to Teach Visual Memory Skills

1. Train teacher assistants and/or teachers to do visual memory training. This can be done with an entire class, with small groups of students or one on one. (Teacher uses transparency parquet blocks for entire class demonstration but each child has his/her own set of blocks and a screen so they will not peek at another child's pattern.)
2. Support staff works with a small group of children on visual memory training. (Pulling students in need but not necessarily at same grade level.)
3. Teach older students to train younger students on visual memory tasks (e.g. fifth grade training third grade). See attached explanation of sample program.
4. Assemble visual memory kits for home use. Parents are instructed how to do the visual memory training and then they are given a kit for home use which includes; parquet blocks, template, screen and chart.

One-on-One or Small Group Strategies

1. ***Visual Form Recognition and Memory:*** First a child learns to model and then he gradually learns to commit this model to memory.

Equipment: Parquetry blocks, pattern blocks or plastic shapes.

Procedure: Once the child has demonstrated the ability to copy complex shapes, he is ready to begin the process of remembering the shapes without an opportunity to look back at a model.

Present a two-piece pattern with the instruction, "Look at this shape and let me know when you have a picture of it in your memory." When the child is ready, you cover up the blocks with a piece of cardboard. Then the child

builds the same pattern, based on visual memory. If the child can get the idea within two or three tries, continue with this exercise.

Five to ten minutes of visual memory exercise each day is plenty. Keep it friendly, fun and successful. The child should get at least 90% of the trials correct or else you're making the task too hard.

For most children, begin with two blocks. You take a set, and the child gets a set. Use the instruction, "Make a picture in your head," then allow five seconds for processing time. Then cover the blocks and allow the child to make the exact model. Try different visual configurations using the same two blocks to determine if the child is able to master this level.

Take your time. It may take one session or five sessions before a child is ready to progress to the next level. Speed of improvement is not important. Establishing competency and confidence is important.

Encourage the child to use a visual approach to this task. Make sure he is "seeing the picture in his head." Don't let the child use auditory cues like, "red on top, blue on bottom," or "triangle, rectangle," or "looks like a sailboat." Encourage him to make a mental picture. As we decrease the time of presentation, he will learn to make a visual memory quickly.

As you reach competency at each level (100% for at least two sessions), move to the next level. Our goal is to challenge without causing frustration. The best instructional rate is 93-97% success. These are the levels of difficulty:

2 shapes (same pieces each time)	5 seconds
2 shapes (selected from a set of 5)	5 seconds
2 shapes (selected from a set of 5)	3 seconds
2 shapes (selected from a set of 5)	1 second
3 shapes (same pieces each time)	5 seconds
3 shapes (from a set of 5)	5 seconds
3 shapes (from a set of 5)	3 seconds
3 shapes (from a set of 5)	1 second
4 shapes (same pieces each time)	5 seconds
4 shapes (from a set of 5)	5 seconds
4 shapes (from a set of 5)	3 seconds
4 shapes (from a set of 5)	1 second

The ability to quickly visualize and remember a 4-shape pattern with 100% success at a one-second exposure is adequate for most children to facilitate the visual memory

skills needed for quick word recognition when reading and spelling. If your child is 8 years or older, enjoys this exercise and is getting really good, go ahead and train him to a 5-block pattern with one second exposure.

Reference: Visualization and Visual Memory, R. Sornson, 1996.

2. ***Spelling Inside Out:*** This exercise develops the ability to store visual pictures in memory, and then to refer to this accurate memory at various intervals. Be careful, you may become an excellent speller if you practice this exercise!

Equipment: Flash cards. On each flash card, one 3, 4, or 5 letter spelling word has been printed in bold letters.

Procedure: Present one word at a time. Ask your student to look at the word with her eyes and then look away and see it in her mind. Then check back to see it with her eyes as many times as necessary to remember a clear mental picture of this word.

There are several ways to exercise this visual memory.

Protocol #1: Ask your student to spell the word inside out. By inside out, I mean starting with the middle of a word, then left of middle, right of middle, far left, and far right. It's really not as complicated as it sounds.

For example, the word ***table*** has five letters. Spelling inside out starts in the middle (b), then moves left of middle (a), right of middle (l), far left (t), and far right (e) making ***balte***.

Long is a four letter word. There is no middle letter. Begin left of middle, right of middle, then far left, and far right. ***Long*** spelled inside out is ***onlg***.

Spelling inside out requires reliance on a picture memory and builds skills allowing students to refer to visual memory for spelling or sight word recognition. After establishing competence with 3, 4, and 5 letter words, try 6 and 7 letter words just for fun. Practice 5-10 minutes daily.

Protocol #2: Ask your student to observe a flashcard "until you have a clear mental picture." Then have her spell the word inside out, then backwards, and finally forwards. Learn 3 to 5 new spelling words per session using this method. It only takes a few minutes.

Consider doing this once at the beginning of a study session and once at the end to be sure this visual memory has been stored long-term.

Protocol #3: Using a flashcard with a 5, 6, or 7 letter word, ask the familiar question, "Will you please tell me when you have a clear picture of this in your memory?" Then just play with her visual memory. Ask any question that requires reference to visual memory like:

Can you spell it inside out?

What is the middle letter?

What letter comes before g?

What is the third from last letter?

Make certain that your student is using a visual strategy when remembering the words. Do not let her use an auditory strategy or auditory rehearsal of the individual letters. Explain to her that she will remember the word longer and more easily by making a picture of it in her mind.

Once your student is successfully maintaining a visual mental image of five letter words, it is important that we help her learn to use visual memory as automatically and easily as possible. To do this, we want to make the activity even more challenging by asking her to spell inside out while she is doing one or more other activities. These activities are intended to be distractions, so that she can learn to use her visual memory with only a fraction of her concentration and attention. Here are a variety of techniques that can be used:

Reference: Visualization and Visual Memory, R. Sornson, 1996.

Peer Tutoring Program for Visual Memory

Silver Springs Elementary School was interested in developing a peer partnership program between fifth grade students and third grade students. The fifth grade staff was interested in reinforcing the concept of "responsibility" and "making a contribution to others" and the support staff was interested in developing the visual memory skills of students. With this in mind the following program was developed and has been extremely successful.

The entire program lasts approximately 3 months but upon its conclusion we have a large group of trained fifth graders who can now work with other students in the building who have weaknesses in the area of visual memory.

In addition, the paired students read to one another, participate in special activities and develop long lasting friendships.

Below you will find the specific explanation given to the fifth grade students during their training by the support staff at Silver Springs Elementary School. There were three fifth

grade classrooms and three third grade classrooms participating in the program and the students met three days per week.

Visual Memory Training - Third/Fifth Grade Partnership

Materials needed: File folder to be used as a screen, name label on folder, 1 pencil, 1 white work mat, 10 blocks (2 sets of 5 different parquet blocks).

DAY 1:

Meet with fifth grade classes and introduce "Visual Memory Training"

1. What is "visual memory"? - being able to have a picture of something in your head without actually seeing it.
2. For example: think of the word "DOG" not a dog but the word DOG. Do you see it in your "mind's eye"? This is what we mean by visualizing something.
3. We cannot remember something new unless we can visualize it or attach it to something we already know (prior knowledge).
4. Remembering spelling words is a good example of using visual memory.
5. Sometimes this skill needs to be taught to children/adults.
6. The good news is that if you aren't so good at this you can get better in most cases with practice.

We need your help as fifth graders in helping us with a project related to "visual memory".

1. We would like to see how well our third graders are doing in using "visual memory". You are going to help us with this.
2. Each fifth grader will be paired with a third grader.
3. Each fifth grader will be training their assigned partner to use visual memory and keeping a log about this.
4. You will be trained how to do this and 2 teachers will be available each time we work on this to answer any questions you may have.
5. You each will be assigned a third grader or in some cases two third graders. You will work with this same child each afternoon right after lunch for 2-3 months.

Each fifth grader will be responsible for the following:

1. Keeping track of their assigned third graders responses on a chart each day.
2. Setting up the task each day and making sure that the blocks are placed into the holder and the chart is in the proper folder each day.
3. Raising your hand and asking questions if you need help.

This is how you will work with your partner:

1. Each day at the assigned time get your folder/ blocks and a pencil.
2. Walk quietly to get your partner.
3. Sit next to your partner at a table or desk but try to sit in the same location every day.
4. Place the white sheet on the table between you and your partner.
5. Place your blocks out on your side and the partners blocks in the circle.
6. Remove 1 chart from the folder and enter in the date/level.
7. Each day you will be completing at least 10 trials if you have time and your partner is eager go on and complete another 10 trials.
8. Mark the % at the end of the line.
9. e.g. If your partner has 7 +’s then they will have 70%.
10. If you can’t complete 10 trials you must just leave the percentile blank and start ALL over on the next line the following day. DO NOT finish up trials on different days.

HOW IT WORKS**To Begin:**

1. Sit side by side with your partner. If you have two partners have one on each side of you. Write the date into the correct box: e.g. 9/13 you don’t need the year. Write the level code into the correct square. E.g. 2-5 is assigned the code of A. So you write A into the code level box.
2. On the first day take 2 blocks and lay them on the table in front of you. Push the other three away or keep in the bag.
3. Place the same color blocks into the circle on the student’s side.
4. Say “I am going to show you a block pattern. I want you to look at the blocks and make a picture of them in your mind”. “I will let you look at them for a few seconds and then I will cover them up and you will need to make the exact same pattern with your own blocks”.
5. Place the screen on the line and arrange your blocks. DO NOT LET THE STUDENT PEEK!
6. Remember: the pattern must be the same. The same blocks and the same position. Demonstrate this.
7. Remove the screen and check the pattern. If it is the same place a + in the first square. If it was not the same place a - in the first block. Continue this for ten times.
8. Count up the +’s only and write in the %. E.g. 9 +’s would be 90%.

9. If there is time and if you think you can do 10 more trials go ahead otherwise just stop and sit quietly until the time is over.
10. The next day look at your chart. If you do not have 90% or 100% for three days in a row you will still be at the same level. You do not go on to the next level until you partner has 90 or 100% for three days in a row!!!
11. If your partner has 90-100% three days in a row then you look at the chart and find the next level and write in the correct level letter. You will be gradually allowing less time for the partner to see the blocks and then adding 1 block. The word mixed means that you are not using the same blocks each time but every trials choosing a variety of the five blocks.
12. When finished gather all supplies and fifth grader will return them to the crate. Please file folders alphabetically!

Miscellaneous:

1. "Make a snapshot in your head"
2. When going to the next level ask if they would like a few practices.
3. If unsure raise hand and ask the teacher. If you think your person is really good then ask one of the teachers to observe and we may accelerate you to a higher level.
4. If your partner is getting really low scores ask a teacher to observe.
5. For 5 secs. /3 secs. count by 1000's.
6. 1 sec. is just lifting the screen up and down.

Hand out folders and materials.

1. Show a few samples of block formations. Demonstrate 2-3-4-5 block patterns for 5-3 or 1 second. Next, demonstrate a pattern and time and let the students guess what level you are on.
2. Remove chart from the folder and enter in the date/level.
3. Each day you will be completing at least 10 trials. If you have time and your partner is eager-go on and complete another 10 trials.
4. Mark the % at the end of the line.
5. E.g. If your partner has 7 +'s then you will have 70%.
6. If you can't complete 10 trials you must leave the percentile blank and start ALL OVER on the next line the following day. DO NOT finish up trials on different days.
7. ANY QUESTIONS? WE'LL PRACTICE WITH PARTNERS NEXT TIME WE MEET.

Day 2***"Let me demonstrate visual memory for you"***

1. Sit side by side with your partner. If you have two partners have one sit on each side of you. Write the date in the correct box: eg. 9/13-you don't need the year. Write the level code into the correct box. E.g. 2-5 is assigned the code A. So you write A into the code level box.
2. On the first day take 2 blocks and lay them on the table in front of you. Push the other three blocks away.
3. Place the same color blocks into the circle on the student's side.
4. Say "I am going to show you a block pattern. I want you to look at the blocks and make a picture of them in your mind". "I will let you look at them for a few seconds and then I will cover them up and you will need to make the exact same pattern with your own blocks".
 - Place the screen on the line and arrange your blocks. DO NOT LET THE STUDENT PEEK.
 - Lift the screen.
 - Count in your head by 1000's and then lower the screen.
 - The student creates the block pattern only after you have lowered the screen.
5. 1 second is just lifting the screen up and down.
6. If you have two partners you should have three sets of blocks in your bag and a special template with three sections and two circles. You will set up your station like this.

[illegible]

A 2	☐ -5 sec.
B 2	☐ -3 sec.
C 2	☐ -3 sec. mix
D 2	☐ -1 sec.
E 2	☐ -1 sec. mix
F 3	☐ -5 sec.
G 3	☐ -3 sec.
H 3	☐ -1 sec.
I 3	☐ -1 sec. mix
J 4	☐ -5 sec.
K 4	☐ -3 sec.
L 4	☐ -1 sec.
M 4	☐ -1 sec. mix
N 5	☐ -3 sec. mix
O 5	☐ -1 sec. mix
P Pictures	
S Spelling	

When your student gets at least 90% correct 3 times in a row, go on to the next level.

Day 3**Meeting With Your Partner and Introductions**

1. Each 5th grade student is paired with a third grade student.
2. Each fifth grade student is given their own folder and materials.
3. $\frac{1}{2}$ of the fifth grade goes to third and $\frac{1}{2}$ of third goes to the fifth grade classroom.
4. On the first day just sit and get to know your partner.
5. Practice introductory questions.
6. Explain visual memory to your partner and what they can expect.
7. Practice for a few minutes today but do not chart.
8. Answer any questions.

Day 4 - Begin

<i>Classroom Activities to Enhance Visual Memory</i>

1. Visual memory and visualization can be introduced to an entire class beginning in kindergarten.
2. Visualization can be introduced and explained using the "Make a Picture" and "Don't Forget" posters. Refer to the posters often.
3. Have the student's think of a word. Where do they see it? What color is it? Is it printed or cursive? (Forehead, black, printed.)
4. Read a short paragraph to younger students and instruct them to create a picture in their head of the images you describe. Have them draw a picture of what they remember. Share pictures and reread paragraph to check accuracy.
5. Using overhead parquet blocks, you can practice visual memory with an entire classroom.
6. Encourage use of visualization; "What picture do you have in your mind?", "Describe your mind picture" or "Don't forget to visualize".
7. Encourage carryover of skills into different areas of the curriculum.
8. Encourage students to draw pictures, organize ideas graphically on an ongoing basis. Introduce a variety of visual tools for students to try.
9. Have students verbalize their own ideas and methods of visualizing.

Extending Visual Memory Skills

Initially begin training with blocks, proceed to pictures and then spelling. Although, strategies to support visual memory for spelling can be initiated early on and develop independently of training with blocks.

Use the terms “visual memory” and “make a picture in your mind” consistently with students. You can begin to teach them how to develop and use these skills in a variety of situations throughout the school day. Visualization helps student’s become better with comprehension and recall of information learned. This can be applied to science, social studies and literature etc...

Quick Draw

1. After students have read a paragraph in their literature book, have them close their book and draw a picture of what they have just read about. Encourage as much detail as possible.
2. This strategy can be applied to other academic areas as well but remember to start with one paragraph at a time.

Exploding Picture

1. This activity will help teach students how visualization can change according to what they hear.
2. Have each student take out a pencil and a piece of paper. Read a paragraph to the students that includes images but that does not have much detail or descriptions. After you are done reading the passage, have the students draw a picture of the picture they have in their mind.
3. Next, read the expanded passage that matches the previous but now includes color, descriptive passages and adjectives.
4. Now have the students take out crayons and a piece of paper and draw their “picture in their mind”.
5. Compare the two pictures and discuss how the “picture in their mind’s eye” changed from one passage to the next.

*Visualization Strategies
for
Reading Comprehension*

Read-Cover-Remember-Retell

- Read as much as your hand can cover.
- Cover up what you have just read.
- Picture what you have read and retell it.

Listen-Quick Draw

- Listen to the paragraph as it is read orally.
- When the reader stops-draw a quick picture of what was pictured in your mind.
- Teacher can reread the paragraph and the students get points for detail remembered.

Listen-Quick Draw-Repeat-Retell

- Listen to a paragraph read by teacher.
- When reader stops-draw picture in mind.
- Continue through short chapter or 3-4 pages.
- Have students use their pictures to retell the chapter or pages.

Resources

Visualization and Visual Memory, Robert Sornson, 1996. Early Learning Foundation.

Communication Lab 2 – More Classroom Lessons for Communication, Ellen Pritchard Dodge, 1994. Linguisystems.

Graphic Organizers – Helping Children Think Visually, 1997. Creative Thinking Press.

Improving Visual Memory 1 and 2, Eleanor Vallipando. Remedia Educational Materials.

Language Lessons in the Classroom, Susan Diamond, 1993. ECL Publications.

Learning and Memory – The Brain in Action, Marilee Sprenger, 1999. ASCD.

Organizing Thinking – Book 1, Sandra Parks and Howard Black, 1992. Critical Thinking Press and Software.

Rethinking the Brain –New Insights Into Early Development, Rima Shore, 1997. Families and Work Institute.

Visualizing and Verbalizing for Language Comprehension and Thinking, Nanci Bell, 1991. Academy of Reading Publications.

Visual Tools for Constructing Knowledge, D. Hyerle, 1996. Innovative Sciences, Inc., www.ascd.org/reading.

Developing Attention and Behavior Skills

Structured classrooms that have clear and reasonable expectations, limits and consequences promote good behavior in students. Children are most comfortable when they know what to expect from adults and what is expected of them. Involving students in the creation of classroom rules and expectations allows them to feel some ownership and power in their classroom. Teachers set the climate in their classrooms with their behavior and attitude. In classrooms where teachers are respectful of their students, are visibly happy and calm, students are usually respectful, happy and engaged. Teachers can also set the climate in their classroom by developing a positive relationship with each of their students beyond academics and school activities. This could be started by greeting each student at the classroom door every morning with a smile. Teachers should also make positive comments to individual students every day about non-school related areas (nicely dressed, asking how their sporting event turned out the previous afternoon or asking about their family). When teachers are stressed and “frazzled” in the classroom it is usually reflected in the students’ behavior. Consequences happen naturally in structured classrooms and students are allowed to learn from their mistakes. When students forget their homework they experience the natural consequence of feeling a little anxious over the mistake, and worry that their grade will be lowered or their work will suffer as a result of their actions. Students that dawdle over classwork and don’t complete assignments that others have completed, experience the natural consequence of missing the opportunity to play with friends or watch their favorite TV show after school because they now have homework.

Students are most attentive and engaged in their work when they are motivated to learn and do well. Structured classrooms need to be fun and inviting. When students are given choices about their work and how it is completed, they feel empowered to take responsibility for their assignments.

Studies have shown that students produce more quality work in environments that allow for movement and activity. Research tells us that children can only attend to a task for their age plus two minutes (Edward Gickling, Instructional Assessment Consultant). So the average 7 year old can only pay attention for about 9 minutes, after which time she may become fidgety, daydream, squirm in her seat or disrupt the class with her inattention. A quick movement activity after 7 or 8 minutes of instruction can reengage students and bring them back to the task at hand and promote more attentiveness in class. Some educators think that moving students around will overexcite them or create chaos in the classroom. Current research tells us that movement activities release the “good” chemicals in the brain that promote attention and focus children.

Educators have known for years that students shut down, act out, and sometimes refuse to work when they are overloaded. Students are easily frustrated when they are asked to do work that is too difficult for them. Research shows us that in reading students need to know 93-97% of the words in a passage they are reading in order to learn and commit new concepts to long term memory (Betts, D.A. 1957 Foundations of

Reading Instruction New York, American Book Company). Below this students are working at frustration level. Students working at frustration level day after day may appear inattentive and disruptive to the rest of the class, while at the same time they are feeling inadequate and stressed. Finding individual students' instructional level helps to create comfortable, more confident students that are ready to learn.

Northville Public Schools utilize a variety of effective behavioral approaches:

1. *Peer Mediation* – classroom teachers and support staff utilize peers to help children problem solve situations. Students may lead their peers in an organized discussion about specific behaviors and guide them to solve their own problems.
2. *Conflict Resolution* – this is a highly effective process to guide individuals through steps in problem solving difficult situations. An adult usually facilitates this process with students, however, students are encouraged to explore resolution possibilities and carry out a plan for solving conflicts.
3. *Behavior Plans/Contracts* – teachers, support staff and parents work together to plan for students to be successful through behavior plans and contracts. Plans usually utilize some sort of positive reinforcement system along with clear expectations and limits on student behavior. Contracts involve placing contingencies for reinforcement into a written document which is agreed to and signed by the student, teacher, parent and any other involved individuals.
4. *Social Groups* – Northville Schools supports students through social groups as a tool to guide students in thinking about social skills and why they are important. Through questions and discussions, role playing and interactive games students are involved in evaluating the necessity of specific social skills. This technique provides hands-on activities for students to work through, think about, discuss and practice in or outside the classroom.
5. *ADHD Manual* – Northville's school social workers and psychologist compiled a manual detailing the facts about ADHD. It includes helpful classroom and home suggestions and references for further information regarding ADD and the process for support in the classrooms.
6. *Home Communication and Programs* – Northville offers *Becoming a Love and Logic Parent* courses for parents of pre-school, elementary and high school children. Individual buildings offer various types of parental support ranging from parent notes and newsletters to evening presentations.
7. *Professional Library* – teachers have a collection of materials available to them for professional development, especially in the area of behavior management and positive classroom management strategies.

8. *Professional Development* – Northville teachers are provided a number of opportunities for professional development not only on curriculum and instruction but also behavior and attention issues at home and at school.

Positive Behavioral Strategies

Structural Variables

1. Clarify expectations (teaching, modeling, guided practice, communication of those expectations to students and their parents).
2. Ask individual students to state the appropriate rule when an infraction occurs.
3. Review behavioral expectations prior to the activity.
4. Give attention to students who are engaged in appropriate behavior.
5. Praise and give positive, specific, descriptive feedback to students meeting expectations. "I like the way Michael is standing in line quietly with his hands to himself. Nice job, Michael." "see that Jodie has her book open to the right page, and her paper and pencil are out. Jodie is ready to work."
6. Use preventive tactics (anticipating problems and avoiding through careful planning).
7. Provide frequent activity breaks and opportunities to move around.
8. Delay instruction until it is quiet and students' attention is focused.
9. Position self at door and greet students individually as they enter the room.
10. Immediately direct students as they enter the room to routine warm-up activities (Journal entries, interpreting brief quotation on board, writing sentences using vocabulary words, math drill of facts, etc).
11. Prepare for and help students through transitions, change of routines, and unstructured situations.
12. Utilize proximity control; circulate among students or stand next to desk of student who is misbehaving or prone to do so.
13. Increase ratio of positive to negative comments to students to at least 10:1.
14. Try ignoring minor inappropriate behavior, particularly if student's misbehavior is not purposeful or intentional.
15. Train other students to ignore.

Environmental Variables

1. Change student seating (closer to center of instruction, closer to teacher, away from friends, away from distracters).
2. Remove distracting items/objects (toys or objects they are playing/fidgeting with) from students.
3. Increase distance between desks and provide more space if possible.
4. Try using music for transitions and for calming/relaxing students.
5. Scan room frequently and stay alert to what students are engaged in at all times.

6. Arrange environment for easy access to all parts of the room and visibility of all students; seat disruptive students closer to you.
7. Examine environmental variables for students' individual needs.

Affective Variables and Personalized Efforts

1. Provide teacher assistance to individual students on a personal 1:1 level.
2. Acknowledge and validate what students are thinking and feeling.
3. Try to be as empathetic and understanding as possible.
4. Talk with former teacher(s) regarding strategies and interventions they may have found effective, and check cumulative record for information that may be significant in trying to help certain students.
5. Make eye contact and use pre-arranged teacher signals and cueing. This can be a specific trigger word or nonverbal signals/gestures that the teacher sets up privately with individual students and uses as a way of warning or redirecting the student (without having to nag or call negative attention to that student in front of peers).

ADD/ADHD/Behavior Difficulties Intervention Strategies

Establish Classroom Rules

1. Post clear rules and expectations
2. Be consistent and follow through

Work at Students Instructional Level

1. Students learn best at their own instructional rate
2. Modify assignments and materials as needed
3. SAME for all is not necessarily BEST for all!
4. Praise small steps towards the goal

Establish Open Communication Between Home and School

1. Establish a consistent plan between home and school
2. Make frequent (daily) contact with parents through notes and/or phone calls
3. Share positive behaviors!!!!
4. Involve the student in communication

Develop Behavior Plan (if needed)

1. Set goals and expectations
2. Set priorities (pick your battles)
3. Determine method of documentation
4. Set-up reinforcement strategies that are important and meaningful to the child

Planned Ignoring

1. Reward students exhibiting positive behaviors

Use Signals

1. Non-verbal signals to let student know that a behavior is occurring or about to occur
2. Verbal cues
3. Turn back to group

Proximity Control

1. Stand near student
2. Place hand on shoulder

Add Excitement

1. Use a variety of manipulatives
2. Use movement in class consistently
3. Send student on an errand
4. Break up lengthy assignments with a stretch or water break
5. Use interesting materials (colored chalk, wipe off boards)
6. Increase the pace of your activity

Remove Distracting Objects/People

1. Seat student next to good role models
2. Move student to peripheral position

Time Out

1. Set up quiet area in room
2. Set up intermediate calming down spot

Other

1. Use a wobble seat
2. Allow student to chew licorice or gum
3. Allow student to choose own desk location dependent on good behavior
4. Use stickers/tally points, etc. . . . for good behavior
5. Good behavior pizza party, etc., . . .
6. Water bottle
7. Set a goal

8. Randomly hand out tickets (positive)

Home-Based Strategies for Children with Attention Variables

1. Establish specific reasonable chores and develop a plan in case they aren't completed.
2. Develop distinct bedtime and early morning routines.
3. Encourage regular cardiovascular exercise.
4. Structure the weekend and evening hours.
5. Help develop good organizational habits.
6. Use and teach the use of aides that help demarcate time, such as clocks, watches, schedules, calendars, and timers.
7. Model task completion and organizational strategies.
8. Prepare the child for anticipated disruption in normal routine.
9. Choose and select rules so that they are few, clear, concise, and enforceable.
10. Choose your battles.
11. Gives lots of encouragement for specific positive behaviors.
12. State what you want done, rather than what you don't want to happen.
13. Coach the child to deal with difficult situations.
14. Be tactile, use hugs, touch.
15. Provide choices. "Would you like your study time from 5:00-6:00 p.m. or 7:00-8:00 p.m.?"
16. Set a reasonable limit on the amount of time spent on homework.
17. Strive for good communication between home and school.
18. Find a suitable study area, with ample supplies, and monitor productivity.
19. Limit television. No video and computer games just before bedtime. Consider a total viewing limit of 5 hours per week.
20. Don't forget the chores.

Resources

Meeting the Challenge, Jim Fay, Foster W. Cline, M.D., and Bob Sornson, 2000, The Love and Logic Press, Inc.

Parenting with Love and Logic, Foster W. Cline, M.D., and Jim Fay, 1990, Pinon Press.

Teaching with Love and Logic, Jim Fay and David Funk, 1995, The Love and Logic Press, Inc.

Spoiling the Childhood, Diane Ehrensaft, Ph.D., 1997, The Guilford Press.

When Love is Not Enough, Nancy L. Thomas, 1997, Families by Design.

Too Much of a Good Thing, Dan Kindlon, Ph.D., 2001, Hyperion.

Raising Resilient Children, Robert Brooks, Ph.D. and Sam Goldstein, Ph.D., 2001, Contemporary Books.

WORKING WITH PARENTS

Parents are an important part of the instructional support team model and may participate in team meetings at school. A relationship needs to be developed and nurtured with parents to maximize growth and learning. Weekly communication between parents and teachers is recommended. A note, phone call or e-mail may be used to follow up on instructional support services. Face to face meetings are most effective. Encourage parent relationships with any member on the team.

When services extend to a home program parents need to know that there will be a future meeting or phone call to follow up on progress. Sending home information cold often doesn't produce change. Parents are not always sure what to do or how to do it so little change occurs.

The following list represents some instructional support opportunities for parent participation in Northville Public Schools. This teaming of parents and teachers makes Northville Schools a dynamic learning environment for our students.

SERVICES THAT ARE OFFERED IN NORTHVILLE PUBLIC SCHOOLS:

1. Love and Logic parent classes by certified Instructional Support staff – some support staff have been trained in Love and Logic Parent Training. Six week sessions are offered to parents during the school year. Parenting workshops are also offered on Saturdays along with free day care.
2. Parents volunteer for Motor Moms and Dads Program – After a training session with support staff, parents volunteer as a motor mom or dad once a week or biweekly (sharing with another parent) to guide students through a series of specific gross motor activities. Students filter through by picking sticks with students names to come to the hall for a 5 minute motor development course. Parents set up and put away equipment as well as move students through activities.
3. Parents volunteer for visual memory and peer tutoring monitors – Parent volunteers for visual memory are trained in a specific protocol to tutor students one to one to improve visual memory that will aid in reading, spelling and math. Parent monitors work in classrooms supervising fifth graders tutoring second graders in visual memory
4. Home motor programs geared toward individual student's needs – When students need specific instruction in the area of motor development often a home program is suggested for maximum student growth. Support staff demonstrates and explains to parents the activities specific to their child's needs. Parents benefit most from

watching staff work with their child using the suggested motor activities. A plan may be written and discussed to help guide parent through the process.

5. Fine motor kits and visual memory kits to work on at home – When students need more intense support in the areas of fine motor or visual memory, some elementaries have fine motor and visual memory kits available to send home with parents. Support staff asks parents to come in and be trained in how to use the kits then parents can use them for as long as needed. Parents are asked to return the kits when they are finished. Many parents request to keep the kits through the summer also.
6. Parents come to school to watch services being delivered so they can reinforce at home - In specific situations parents are encouraged to come to school and observe support staff modeling individualized instruction to promote growth and success in the classroom.
7. PTA as well as Northville Schools offer parent/staff education workshops throughout the school year on various topics of interest for personal and professional growth.
8. Instructional support information tables at open house, conferences, and kindergarten round up – Information regarding parent resources to include kindergarten readiness information, current articles that are research based, instructional support activities and materials to support academic and social skills.
9. Parents volunteer as helpers in reading program – Parents provide support to struggling readers by joining support staff in pull-out reading programs. Parents work with 2-3 students at a time in a guided reading session. In some buildings this program is 4 days a week for 30 minutes (3 ten minute groups). Parents work on improving fluency and comprehension by reminding students of reading strategies and then asking comprehension questions on what they've read.
10. Parent Library – Elementary buildings have organized parent libraries to provide a variety of resources on current topics of interest in the areas of parenting and education.
11. Parents serve on School Improvement Teams and on district-wide curriculum committees.

NORTHVILLE PUBLIC SCHOOLS
Northville, Michigan

BOARD POLICY

PARENTAL INVOLVEMENT

Parental involvement with the schools is necessary to develop shared educational goals, and to have a positive effect on student learning. Parents are encouraged to participate in decision making processes through district committees, PTAs, school improvement teams, and other committees deliberating on matters of interest to students and families. Parents are also encouraged to visit or observe their child's classroom or review curriculum and classroom materials without interfering with the rights of other children or families. District teachers and administrators will continuously strive to enhance parental involvement through effective home/school communications, by encouraging parent participation in classroom activities, and by providing additional opportunities for parents to learn about educational issues and the Northville Public Schools.

The Board hopes and expects that parents will support the education of their child(ren) by:

1. Helping children to value education and understand individual responsibility
2. Emphasizing the importance of attendance, completion of work and compliance with rules of conduct.
3. Providing positive home conditions that support learning and appropriate behavior.
4. Volunteering in the school and for school/district committees.
5. Learning school policies and procedures.
6. Monitoring homework and school-related activities.
7. Serving as an advocate for their child's educational needs.
8. Contacting teachers and/or administrators and effectively communicating concerns, questions, or suggestions.

The Superintendent will develop procedures and practices for the district which will encourage parental participation in classroom, school, and district activities.

Adopted: May, 1996
Reaffirmed: September 28, 1999

Appendix

REFERENCES

- Aaron, P.G. (1997). The impending demise of the discrepancy formula. *Review of Educational Research*, 67, 461-502.
- Adams, J.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Adams, M.J., & Bruck, M. (1995, Summer). Resolving the "Great Debate." *American Educator*, 19(2), 7-20.
- Allington, R.L., & Cunningham, P.M. (2001). *Schools that work: Where all children read and write* (2nd ed.). New York: Longman.
- Allington, R.L., & Walmsley, S.A. (1995). *No quick fix: Rethinking literacy programs in America's elementary schools*. Barksdale, NJ: International Reading Association.
- Armstrong, T. (1987). *In their own way*. Los Angeles: Tarcher.
- Barnett, W.S. (1996). *Lives in the balance: The Age-27 benefit-cost analysis of the High/Scope Perry Preschool Program*. Ypsilanti, MI: High/Scope Press.
- Berninger, V.W. (1998). *Process assessment of the learner: Guidelines for intervention*. San Antonio, TX: The Psychological Corporation.
- Berninger, V.W. (1999). Coordinating transcription and text generation in working memory during composing: Automatic and constructive process. *Learning Disability Quarterly*, 22, 99-112.
- Berrueta-Clement, J.R., Schweinhart, L., J., Barnett, W.S., Epstein, A.S., & Weikart, D.P. (1984). *Changed lives: The effects of the Perry Preschool Program on youths through age 19*. (Monographs of the High/Scope Educational Research Foundation, No 8). Ypsilanti, MI: High/Scope Press.
- Beuhring, T.B., Blum, R.W., & Rinehart, P.M. (2000). The Effects of Race, Income and Family Structure on Adolescent Risk Behaviors, *American Journal of Public Health*, 90(12).
- Block, J.H. (1980). Success rate. In C. Denham & A. Lieberman (Eds.). *Time to learn* (pp. 95-106). Washington, DC: U.S. Department of Education, National Institute of Education.

- Campbell, F.A., & Ramey, C.T. (1999). *Early learning, later success: The Abecedarian Study—Early childhood educational intervention for poor children: Executive summary*. http://www.fpg.unc.edu~abc/embargoed/executive_summary.htm.
- Capute, A.J., Accardo, P.J., & Shapiro B.K. (Eds). (1994). *Learning disabilities spectrum: ADD, ADHD, and LD*. Baltimore: York Press, Inc.
- Clay, M.M. (1993). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.
- Coleman, M., Rowland, B., & Hutchins, B. (1997, November). *Parents as teachers: Policy implications for early school intervention*. Paper presented at the annual meeting of the National Council on Family Relations, Crystal City, VA.
- Cunningham, P.M., & Allington, R.L. (1998). *Classrooms that work: They can all read and write*. New York: Addison Wesley Longman, Inc.
- Drazen, S., & Haust, M. (1996). *Lasting academic gains from an early home visitation program*. Binghamton, NY: Community Resource Center.
- Duane, D.D., & Gray, D.B. (Eds). (1991). *The reading brain: The biological basis of dyslexia*. Baltimore: York Press, Inc.
- Ellis, A., & Fouts, J. (1997). *Research on Educational Innovations* (2nd ed.). Princeton Junction, NJ: Eye on Education Publishers.
- Fay, J. (2001). *The Classroom of Your Dreams, Preventing Early Learning Failure*, ASCD.
- Fletcher, J.M., Francis, D.J., Shaywitz, S.E., Lyon, G.R., Foorman, B.R., Stuebing, K.K., & Shaywitz, B.A. (1998). Intelligent testing and the discrepancy model for children with learning disabilities. *Learning Disabilities Research and Practice*, 13, 186-203.
- Foorman, B.R., Francis, D.J., Fletcher, J.M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology*, 90(1), 3-55.
- Gickling, E.E. & Armstrong, D.L. (1978). Levels of Instructional Difficulty as Related to On-Task Behavior, Task Completion and Comprehension, *Journal of Learning Disabilities*, November, 1978, pgs. 32-39.
- Gickling, E.E., & Rosenfield, S. (1995). Curriculum-based assessment. In A. Thomas & J. Grimes (Eds), *Best practices in school psychology* (pp. 587-595). Washington, DC: national Association of School Psychologists.

- Graham, S. (1999). Handwriting and spelling instruction for students with learning disabilities: A review. *Learning Disability Quarterly*, 22, 78-98.
- Hartman, W.T., & Fay, T.A. (1996). *Cost-effectiveness of instructional support teams in Pennsylvania*. Policy Paper No. 9 of the Center for Special Education Finance. Palo Alto, CA: American Institutes for Research.
- Honig, B. (1996). *Teaching our children to read: the role of skills in a comprehensive reading program*. Thousand Oaks, CA: Corwin Press, Inc.
- Jensen, E. (1998). *Teaching with the brain in mind*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Kline, P. (1988). *The everyday genius*. Arlington, VA: Great Ocean.
- Kline, P. (2001). Teaching to All of a Child's Intelligence, *Preventing Early Learning Failure*, ASCD.
- Kovaleski, J.F., Gickling, E.E., Morrow, H., & Swank, P.R. (1999). High versus low implementation of instructional support teams: A case for maintaining program fidelity. *Remedial and Special Education*, 20(3), 170-183.
- Kovaleski, J.F., Tucker, J.A., & Duffy, D.J., Jr. (1995). School reform through instructional support: The Pennsylvania initiative, Part I. *Communique*, published by the National Association of School Psychologists, 23(8), insert.
- Kovaleski, J.F., Tucker, J.A., & Stevens, L.J. (1996). Bridging special and regular education: The Pennsylvania initiative. *Educational Leadership*, 53(5), 44-47.
- Lowery, L. (1998). Curriculum reflects brain research. *Educational Leadership*, 56(3), 27-30.
- Lyon, G.R. (1995a). Research initiatives in learning disabilities from scientists supported by the National Institute of Child Health and Human development, *Journal of Child Neurology*, 10(1), 120-126.
- Lyon, G.R. (1997). Report on learning disabilities research. Testimony given before the Committee on Education and the Workforce in the U.S. House of Representatives, July 10, 1997. (Available online at www.lonline.org).
- Lyon, G.R. (1998). Report on learning disabilities research supported by the National Institute of Child Health and Human Development. Address to the Committee of Labor and Human Resources of the U.S. Senate, April 28, 1998. (Available online at www.flac.com/edarticles.htm).

- Lyon, G.R. (ed.). (1994). *Frames of reference for the assessment of learning disabilities: New views on measurement issues*. Baltimore: Paul H. Brookes Publishing Company.
- Lyon, G.R., Gray, D.B., Kavanagh, J.F., & Krasnegor, N.A. (Eds). (1993). *Better understanding learning disabilities: New views from research and their implications for education and public policies*. Baltimore: Paul H. Brookes Publishing Company.
- National Research Council. (1998). *Preventing reading difficulties in young children*. Washington, DC: national Research Council.
- Pawlowski, K. (2001). IST in Action, *Preventing Early Learning Failure*, ASCD.
- Pfannenstiel, J. (1989). *New parents as Teachers project: A follow-up investigation*. Overland Park, KS: Research & Training Associates.
- Pikulski, J.J. (1994). Preventing Reading Failure, *The Reading Teacher*, Vol. 48, No 1.
- Richardson, S.O. (1994). *Doctors ask questions about dyslexia: A review of medical research*. Baltimore: The international Dyslexia Association.
- Rosenfield, S.A., & Gravois, T. (1996). *Instructional Consultation Teams*. New York: The Guilford Press.
- Shaywitz, B.A., Fletcher, J.M., & Shaywitz, S.E. (1995). Defining and classifying learning disabilities and attention deficit hyperactivity disorder. *Journal of Child Neurology*, 10, 50-57.
- Shaywitz, S.E. (1996). Dyslexia. *Scientific American*, 275(5), 98-104.
- Slavin, R.E. (1996). Neverstreaming: Preventing learning disabilities. *Educational Leadership*, 53(5), 4-7.
- Sornson, B., et al, (2001). *Preventing Early Learning Failure*, ASCD.
- Sornson, N. (2001). Vision and Learning, *Preventing Early Learning Failure*, ASCD.
- Torgesen, J.K. (1995). *Phonological Awareness: A critical factor in dyslexia*. Baltimore: The International Dyslexia Association.
- Torgesen, J.K. (1998). *Catch them before they fall*. *American Educator*, 22(1-2), 32-39.
- Torgesen, J.K., & Wagner, R.K. (1998). Alternative diagnostic approaches to specific developmental reading disabilities. *Learning Disabilities Research and Practice*, 13, 220-232.

- Torgesen, J.K., Wagner, R.K., Rashotte, C.A., Alexander, A.W., & Conway, T. (1997). Preventative and remedial interventions for children with severe reading disabilities. *Learning Disabilities: A Multi-Disciplinary Journal*, 8, 51-62.
- Van De Walle, J.A. (1998). *Elementary and middle school mathematics: Teaching developmentally* (3rd ed.). New York: Longman.
- Vellutino, F.R., Scanlon, D.M., & Tanzman, M.S. (1998). The case for early intervention in diagnosing specific reading disability. *Journal of School Psychology*, 36, 367-397.
- Vellutino, F.R., Scanlon, D.M., Sipay, E.R., Small, S.G., Pratt, A., Chen, R., & Denckla, M.B. (1996). Cognitive profiles of difficult-to-remediate and readily remediated poor readers: Early intervention as a vehicle for distinguishing between cognitive and experiential deficits as basic causes of specific reading disability. *Journal of Educational Psychology*, 88, 601-638.
- Walmsley, S.A., & Allington, R.L. (1995). Redefining and reforming instructional support programs for at-risk students. In R.L. Allington & S.A. Walmsley (Eds), *No quick fix: Rethinking literacy programs in American's elementary schools* (pp. 19-41). New York: Teachers College Press.
- Wheeler, W. (1994). *A study of the Missouri Parents as Teachers program and its effects on the readiness skills of children entering kindergarten in southwest Missouri public schools*. Blue Eye, MO: Blue Eye School District.

*Recommended Books*Activities Unlimited

Alexandria Cleveland, Barbara Caton and Lezlie Adler
 A Building Blocks Publication
 38W567 Brindlewood
 Elgin, Illinois 60123

Brain Gym

Paul Dennison, Gail Dennison
 Edu-Kinesthetics, Inc.
 P.O. Box 3395
 Ventura, CA 93006-3395

Creativing Independent Learners

Patricia Pavelka
 Crystal Springs Books
 10 Sharon Rd.
 P.O. Box 500
 Peterborough, N.H. 03458-0500

How to Reach and Teach All Students in the Inclusive Classroom

Sandra Reif and Julie Heimburge.
 The Center for Applied Research in Education.
 West Nyack, New York, 10994

I Can Learn!More I Can Learn!

Gretchen Goodman
 Crystal Springs Books
 Ten Sharon Rd.
 Box 500
 Peterborough, NH 03458-0500

Fine Motor Skills and Handwriting Activities for Young ChildrenFundamental Motor Skills and Movement Activities for Young Children

Joanne Landy and Keith Burrige
 The Center for Applied Research
 West Nyack, New York 10994

Inclusion: A Fresh Look

Linda Tilton
 Covington Cove Publications
 5620 Covington Rd.
 Shorewood, Minnesota 55331
 FAX 612 470-8768

Meeting the Challenge

Jim Fay, Foster Cline, Bob Sornson
 Love and Logic Press
 2207 Jackson St.
 Golden, CO 80401

Parenting with Love and LogicTeaching With Love and LogicUsing Love and Logic to Help Children Develop Attention and Behavior Skills

Love and Logic Press
 2207 Jackson St.
 Golden, CO 80401

Preventing Early Learning Failure

Bob Sornson
 Association for Supervision and Curriculum Development
 Alexandria, Virginia 22311-1714

Reaching the Hard to Teach

Dr. Judy Wood, Inc.
 12411 Southbridge Dr.
 Midlothian, Virginia 23113
 FAX 804 379-9430

Smart Moves

Carla Hannaford
 Great Ocean Publisher's, Inc.
 1823 N. Lincoln St.
 Arlington, Virginia 22207-3746

Start Smart

Pam Schiller
 Gryphon House, Inc.
 10126 Tucker St.
 Beltsville, Md. 20705

Straight Talk About Reading

Susan Hall and Louisa Moats
 Contemporary Books

Teaching Kids With learning Difficulties in the Regular Classroom

Free Spirit Press
 400 First Avenue North
 Suite 616
 Minneapolis, MN. 55401-1730

Terrific Me-No Fail P.E.

Nancy E. Conkle
15214 Faubion Trail
Leander, Texas 78641

The Pre-Referral Intervention Manual

Stephen B. McCarney, Ed.D. and Kathy Wunderlich, M.ed.
Hawthorne Educational Services, Inc.
800 Gray Oak Dr.
Columbia, MO 65201

The Tough Kid Tool Box

Sopris West
4093 Speciality Place
Longmont, CO 80504

Helping At-Risk Learners in the Intermediate Grades
Learning Strategies That Build Success
Strategies for Literacy Instruction in the Primary Grades

Reading Connections
2107 East 23rd Street
Tulsa, OK 74114-2905
918 743-6580

SST Trainer Manual

Sopris Press, Inc.
1140 Boston Ave.
Longmont, CO 80501
303 651-2829

Instructional Support Articles/Programs

Hinkson-Herrmann, Ann, Building Success, Midwestern Intermediate Unit IV, 453
Maple St. Grove City, PA. 16127. 412 458-6700.

IST-The Instructional Support Team. Project of Pennsylvania. 1110 Enterprise Rd. East
Petersburg, PA 17520. 717 560-5376 201.

Schoenlein, James J., Intervention Assistance Teams in Ohio: From Where? To Where?
American Secondary Education. Vol. 20, 1991,

Sornson, Robert, Preventing Early Learning Failure, ASCD, 2001.

1. Manufacturing Early Learning FailureBob Sornson
2. Teaching Children to Read: What Really MattersRichard L. Allington
3. Building Early Numeracy SkillsJoyce McLeod
4. Who Is Really Learning Disabled?Gary L. Hessler
5. Enhancing the Listening Environment for
Early Learning Success.....Carol Flexer
6. Instructional Support Teams: It's a Group ThingJames A. Tucker
7. The Instructional Support Team Concept in ActionKenneth F.
Pawlowski
8. Vision and Learning.....Nancy Sornson
9. Putting the Learning Needs of Children FirstEdward E. Gickling and
Verlinda P. Thompson
10. Success for All: Failure Prevention and
Early InterventionRobert E. Slavin
11. Parents As Teachers: Improving the Odds
with Early InterventionMildred M. Winter
12. Getting Ready for School in Preschool.....Lawrence J.
Schweinhart
13. "Every Child Will Succeed—No Excuses!" The 1,000 Days to
Success School NetworkStephen Kay and
Craig Wheaton
14. Teaching to All of a Child's IntelligencesPeter Kline
15. Project First Step: The Connection Between
Fundamental Physical Skills and
Academic Learning.....Thomas R. Johnson

16. The Classroom of Your DreamsJim Fay
17. Three Stories from Huntington Woods School: Implementing the
Conditions to Achieve Quality Learning Kaye Mentley and
Sally Ludwig
18. "Jimmy": The Power of Parent-Teacher CooperationBob Sornson
19. Preventing Early School FailureBob Sornson

Student Assistance Program. Student Services. Holland Public Schools. 1998.

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2107 East 34rd Street
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918-743-6580

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12613 S. Redwood Rd.
Riverton, Utah 84065
800 383-9362

Dr. John Jacobi O.D.
Suburban Optometric Assoc.
31330 Schoolcraft Rd.
Livonia, Michigan 48150
734 525-8170

Dr. Tom Johnson
Project First Step
First Step, Inc. of Michigan
P.O. Box 86
Gobles, Michigan 49055
616 628-4321

The Home Program

1. Neutralize Arguments
2. Learn to Use Enforceable Statements
3. Never Break a Sweat
4. Establish a Routine for the First Hour of the Morning
5. Establish a Working Relationship with Your Child's Teacher
6. Develop a Recovery Time Routine
7. Food Issues
8. Chores
9. Only Good Minutes Are Spent in the Classroom
10. Homework

Bob Sornson and Jim Fay
Meeting the Challenge, 2000
loveandlogic.com

The School Program

1. Expect Students to Be in Class Without Bothering Others
2. Develop Relationships with Parents and Students
3. Develop a Foolproof Reporting System
4. Find Good Reasons to Let Kids Move
5. Apply Attribution Theory
6. Use Positive Peer Pressure / Egg Timer
7. Give Parents Positive Feedback
8. Imagine It Working

Bob Sornson and Jim Fay
Meeting the Challenge, 2000
loveandlogic.com

APPENDIX B

DATA COLLECTION INSTRUMENTS

Northville Public Schools
Special Education Services

Instructional Support Teams Classroom Teacher Questionnaire

We need your help in our study of the effectiveness of the Instructional Support Team (IST) process in the Northville Public Schools. Please answer the questions below as accurately as possible. Mark your responses like this ☒ not this ☐ or this ☐.

- (1) Name (Optional) _____
- (2) Grade level ☐ Kindergarten ☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth
- (3) School
☐ Amerman ☐ Moraine ☐ Silver Springs ☐ Thornton Creek ☐ Winchester
- (4) About how much time do you spend in an average week on the IST process?
☐ Less than 1/4 day ☐ From about 1/2 to a full day
☐ From about 1/4 to 1/2 day ☐ More than a full day

Indicate how effective you believe the IST process is in obtaining the following results:

		Excellent	Good	Fair	Poor	
(5)	Increasing student achievement	0	0	0	0	
(6)	Improving student behavior	0	0	0	0	
(7)	Improving student affect	0	0	0	0	
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(8)	I have a good understanding of the instructional support process at my school	0	0	0	0	0
(9)	The recommendations of the IST meetings are helpful to me as a teacher	0	0	0	0	0
(10)	The recommendations of the IST meetings are helpful to the child ...	0	0	0	0	0
(11)	The goals/recommendations made at the IST meeting are completed in a timely fashion	0	0	0	0	0
(12)	The amount of paperwork involved is manageable	0	0	0	0	0

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(13) The children make progress as a result of the intervention plans developed at the IST meetings	0	0	0	0	0
(14) The school's curriculum is appropriate for all students	0	0	0	0	0
(15) Changes are needed in classroom instructional strategies in order to meet the needs of all students	0	0	0	0	0
(16) Teachers need additional professional development in order to meet the needs of all students	0	0	0	0	0
(17) As a result of the IST process, I have developed new skills that I can apply to all children in my classroom	0	0	0	0	0
(18) As a result of the IST, I increasingly believe that I can impact student achievement in the classroom	0	0	0	0	0
(19) The IST has resulted in greater parent involvement with the school	0	0	0	0	0
(20) The IST process has resulted in greater parent knowledge of how to work with their child at home	0	0	0	0	0
(21) Students are successful as a result of the IST process	0	0	0	0	0
(22) Co-teaching/modeling with members of the IST has been helpful to me as a teacher	0	0	0	0	0
(23) Co-teaching/modeling with members of the IST has been helpful to students in my classroom	0	0	0	0	0
(24) I feel that the IST process is an important part of our school's services to students	0	0	0	0	0

(25) What services have you received from the IST? _____

(26) Describe your involvement in the IST process. _____

(27) How has your involvement with the IST generalized to other students in your classroom?

(28) What benefits for students have you observed? _____

Comments:

Please return this form to the school office by November 30, 2001.
Thank you for your assistance.

Northville Public Schools
Special Education Services

Instructional Support Teams Parent Questionnaire

We need your help in our study of the effectiveness of the Instructional Support Team (IST) process in the Northville Public Schools. Please answer the questions below as accurately as possible. Mark your responses like this ☒ not this ☐ or this ☐.

(1) Child's Name (Optional) _____

(2) Grade

☐ Kindergarten ☐ First ☐ Second ☐ Third ☐ Fourth ☐ Fifth

(3) School

☐ Amerman ☐ Moraine ☐ Silver Springs ☐ Thornton Creek ☐ Winchester

(4) From your viewpoint as a parent, what is the purpose of the Instructional Service Team?

Please respond to the statements below.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(5) I feel that I have an important role to play in the IST process	☐	☐	☐	☐	☐
(6) As a result of the IST process, I learned new strategies to help my child	☐	☐	☐	☐	☐
(7) I work at home with my child to supplement the education he/she receives at school	☐	☐	☐	☐	☐

(8) As a result of the IST process, what benefits have you observed for your child?

Comments:

Please return this survey to your child's teacher by November 30, 2001.
Thank you for your cooperation.

Northville Public Schools
Special Education Services

**Instructional Support Teams
Principal Questionnaire**

We need your help in our study of the effectiveness of the Instructional Support Team (IST) process in the Northville Public Schools. Please answer the questions below as accurately as possible. Mark your responses like this ☐ not this ☒ or this ☐.

- (1) Name _____
- (2) School _____
☐ Amerman ☐ Moraine ☐ Silver Springs ☐ Thornton Creek ☐ Winchester
- (3) What is the history of the IST process at your school? When did it begin? How? What changes have occurred along the way?

	2001	2000	1999	1998	1997
(4) What year did your school initiate the IST process? ..	☐	☐	☐	☐	☐
(5) About how much time do <u>you</u> spend in an average week on the IST process?					
☐ Less than 1/4 day	☐ From about 1/2 to a full day				
☐ From about 1/4 to 1/2 day	☐ More than a full day				

Indicate how well the IST process is working in each of the following phases:

	Excellent	Good	Fair	Poor
(6) Referral and contracting	☐	☐	☐	☐
(7) Problem identification	☐	☐	☐	☐
(8) Strategy development	☐	☐	☐	☐
(9) Implementation	☐	☐	☐	☐

	Excellent	Good	Fair	Poor
(10) Evaluation/review	0	0	0	0

Indicate how effective the IST process is in obtaining the following results:

(11) Increasing student achievement	0	0	0	0
(12) Improving student behavior	0	0	0	0
(13) Improving student affect	0	0	0	0

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(14) The school's curriculum is appropriate for all students	0	0	0	0	0
(15) Changes are needed in classroom instructional strategies in order to meet the needs of all students	0	0	0	0	0
(16) Teachers need additional professional development in order to meet the needs of all students	0	0	0	0	0
(17) Regular classroom teaching has improved as a result of the IST process	0	0	0	0	0
(18) As a result of the IST, teachers increasingly believe they can impact student achievement in the classroom	0	0	0	0	0
(19) The IST has resulted in greater parent involvement with the school	0	0	0	0	0
(20) IST has resulted in greater parent knowledge of how to work with their child at home.	0	0	0	0	0
(21) Placement results in success for students	0	0	0	0	0

(22) Describe your role in the IST process. _____

(23) What benefits for students have you observed? _____

(24) What are the future plans for the IST at your school? _____

Please complete the attached table and return it with your questionnaire.

Comments

Please return this survey to Office of Special Education by November 30, 2001.
Thank you for your cooperation.

Northville Public Schools Special Education Services

Instructional Support Teams

IST Personnel Questionnaire

We need your help in our study of the effectiveness of the Instructional Support Team (IST) process in the Northville Public Schools. Please answer the questions below as accurately as possible. Mark your responses like this ☐ not this ☒ or this ☐.

- (1) Name (Optional) _____
- (2) Grade level
☐ Kindergarten ☐ Grade 2 ☐ Grade 4 ☐ Does not apply
☐ Grade 1 ☐ Grade 3 ☐ Grade 5
- (3) School
☐ Amerman ☐ Moraine ☐ Silver Springs ☐ Thornton Creek ☐ Winchester
- (4) Position
☐ Paraprofessional ☐ Psychologist ☐ Counselor ☐ Teacher
- (5) Are you involved in the IST process on a daily basis? ☐ Yes ☐ No
- (6) On an average day, about how much time do you spend on the IST process?
☐ Less than 1/4 hour ☐ More than 3/4 up to 1 hour ☐ More than 4 hours
☐ More than 1/4 up to 1/2 hour ☐ More than 1 up to 2 hours
☐ More than 1/2 up to 3/4 hour ☐ More than 2 up to 4 hours

Indicate how effective you feel that the IST process is in obtaining the following results:

		Excellent	Good	Fair	Poor	
(7)	Increasing student achievement	0	0	0	0	
(8)	Improving student behavior	0	0	0	0	
(9)	Improving student affect	0	0	0	0	
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(10)	The school's curriculum is appropriate for all students	0	0	0	0	0
(11)	Changes are needed in classroom instructional strategies in order to meet the needs of all students	0	0	0	0	0
(12)	I feel comfortable with the IST process in my building.	0	0	0	0	0
(13)	I feel that my instructional support efforts have an impact on student achievement	0	0	0	0	0

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
(14) Teachers need additional professional development in order to meet the needs of all students	0	0	0	0	0

(15) How do you typically spend your time in IST? *Indicate all that apply*

☐ Contacting parents	☐ Materials development	☐ Meeting with teachers
☐ Working directly with students	☐ Modeling strategies with teachers or TAs	☐ Paperwork
		☐ Other

(16) In what area(s) do you feel you need professional development? Check all that apply

(17) With regard to the IST process, what really works? _____

(18) What could be improved? _____

(19) Comments _____

Please return this form to the school office by Wednesday, November 30 2001.
Thank you for your assistance.

APPENDIX C

SPECIAL EDUCATION COST REPORT

SE-4096		SPECIAL EDUCATION ACTUAL COST REPORT					
(PAGE 3)		(JULY 1, 2000 THROUGH JUNE 30, 2001)					
DISTRICT NAME NORTHVILLE PUBLIC SCHOOLS				DISTRICT CODE 82-390			
FUNDING SOURCE		PERSONNEL					
SECTION 52 K12		PROFES-	REIMB	SALARY &	PURCHASED SUPPLIES	OTHER	
SECTION 53		IONAL	AIDES	BENEFITS	SERVICES	MATERIALS	EXPENSES TOTAL
FUNCTIONS		(1)	(2)	(3)	(4)	(5)	(6) (7)
1	122 LRE Classroom Aides		7.4	124,123			124,123
2	Educable Mentally Imp						-
3	Trainably Mentally Imp						-
4	Severely Mentally Imp						-
5	Emotionally Imp						-
6	Learning Disabled	2.5		125,142			125,142
7	Hearing Impaired						-
8	Visually Impaired						-
9	Physically Imp						-
10	Severely Multiply Imp						-
11	Preprimary Imp						-
12	Severely Lang Imp						-
13	Autistic Imp						-
14	Resource room	12.7		847,607	7,998	12,722	868,325
15	197 Fringe Benefits			321,571			321,571
16	213 Health Services						-
17	214 Psychological	2.0		121,494			121,494
18	215 Speech & Audiology	5.8		280,581	1,835		282,396
19	216 Social Work	2.3		138,402			138,402
20	217 Visual Aid						-
21	218 TC/MI			7			7
22	218 TC/EI						-
23	218 TC/LD	1.0		63,190			63,190
24	218 TC/HI						-
25	218 TC/MI						-
26	218 TC/POHI						-
27	218 PPI Home Program						-
28	219 Physical Education						-
29	219 Other pupil support						-
30	221 Imp of Instruction						-
31	226 Supervision/Direction			36,196			36,196
32	257 School Principal						-
33	280 Support Serv. Central						-
34	290 Support Serv. Other						-
35	297 Fringe benefits			177,895			177,895
36	Section 24 Programs						-
37	Subtotal 1-36	26.1	7.4	2,236,188	9,831	12,722	2,258,741
38	Indirect costs (12.14)					274,211	274,211
39	231						-
40							-
41	261						-
42	271						-
43	Tuition-MSB						-
44	Tuition-MSD						-
45	Subtotal 38-44			-	-	274,211	274,211
46	TOTAL COST 37 AND 45	26.1	7.4	2,236,188	9,831	12,722	2,532,952

APPENDIX D

SUMMARY OF OPEN-ENDED COMMENTS BY PRINCIPALS, CLASSROOM TEACHERS, AND PARENTS

Summary of Open-Ended Comments by Principals, Classroom Teachers, and Parents

Principals' Report on Their Role in the IST Process

In this section, principals' responses to items on the Principal Questionnaire are given. Each question is stated, followed by principals' responses to that question.

What is the history of the IST process at your school? When did it begin?

How? What changes have occurred along the way?

Amerman: The concept started about three years ago. Over that period of time we have been modifying our record keeping, data collection, and receiving professional development to increase skills. We continue to promote process with the rest of the faculty.

Moraine: Moraine continues to involve classroom teachers as primary members of the IST, which we believe to be a critical component. IST is servant leadership oriented, with our facilitation team meeting annually one on one with each grade level team for honest feedback on ways IST can be more responsive to teacher and student needs. We are currently focusing on collecting data –_baseline and at intervals – to determine which strategies are successful and which ones are not.

Silver Springs:

1995-1996

1. staff recognition of need for support
2. information gathering (Gickling-Tucker)

3. special education staff met to establish “framework”
4. presentation to staff (sought input) – collegials – surveys
5. analysis of feedback

1996-1997 (1st year implemented)

1. IST position established
2. determined role of IST
3. referral plan was presented to staff/became SI goal

1997-1998

1. paperwork modification

1998-1999

1. fine tuning record keeping – blue folders – tracking progress

2000-2001

1. implemented support partners concept (GRAVOIS)

Thornton Creek: I do not know the original history but we have in the last two years gained involvement from many classrooms teachers. The team has grown tremendously in sharing responsibility for the process.

Winchester: During the 1998-1999 school year the IST process was introduced to Winchester. Carrie O. (RR) and Jay Hillard (LC) teamed together and began defining modifications to the prereferral process. Additions and revisions include:

1. Blue folders
2. Referrals
3. Data collection

4. Co-teaching
5. Skill Builders Program
6. Drop-in support 3:00 – 3:30 daily
7. Weekly IST meetings
8. Professional development opportunities, i.e. Todd Gravois

Describe your role in the IST process.

Amerman: Coordination, facilitation, team member carrying out IST services.

Moraine: Support team presence at meetings upon request, impacting culture of school (informal), planning professional development, getting team resources, allowing flexibility.

Silver Springs: Asking tough questions; holding staff accountable; keeping momentum going.

Thornton Creek: Active participant, facilitator.

Winchester: As principal, I am a member of IST and review collaboratively with RR teachers and staff members.

What benefits for students have you observed?

Amerman: Improved reading, behavior, self-esteem.

Moraine: Shift from deficit model to building on strengths—basing plans on what we know about learning.

Silver Springs: Increased achievement; better self-esteem; higher level of student “engagement”; as a result of experiencing success, students are more “motivated” to learn.

Thornton Creek: Problems solved early, good parent support, improved test scores, all staff involvement.

Winchester: Early intervention strategies focused on student learning—i.e., small group, integrated with reading programs and whole-group transitions. Some efforts related to “differentiation” in reading also noted in classrooms— upper grades.

What are the future plans for the IST at your school?

Amerman: Continued promotion, needs to continue work in diagnosis and parent involvement.

Moraine: Continuing to work on data component and continuing to be responsive to feedback from teachers re: how IST can be of assistance.

Silver Springs: We need to develop some common strategies (understood and implemented by all IST members) to deal with issues such as phonemic awareness, language deficiencies and lack of reading skills.

Thornton Creek: We are always looking at ways to improve, more classroom teacher staff development is needed.

Winchester: Continue to focus on problem solving consultations between classroom teachers and RR:

1. continue data collection for analysis
2. develop effective communications between staff members
3. utilize co-teaching opportunities with RR/IST staff
4. sharing resources, techniques, strategies
5. refine IST delivery system

Thornton Creek: We need additional staff in order to maintain current program. I only have one LC for a school that is more than twice as large as others. Our Special Education certified load has greatly increased this year due to children who have moved into the district.

Summary of Principal Responses

Principals described varied histories of involvement with the Instructional support Team concept. Silver Springs involvement began with training in 1995-97. Thornton

Creek was the next to implement a formal IST process. At the time of this evaluation, Moraine, Amerman and Winchester had completed two full years of IST implementation.

Principal roles in the IST process were all described as active and involved. Benefits observed by principals were all positively stated. Student achievement gains were consistently noted.

Future plans for IST emphasized improved diagnosis of need, parent involvement, feedback to teachers, development of common strategies, and communication between IST and general classroom staff.

Classroom Teachers' Responses

Classroom teachers' responses to items on their questionnaire are presented in this section. Again, each question is stated, followed by teachers' responses to that question.

What services have you received from the IST?

1. Motor skills, fine motor kits, suggestions for improving skills and/or behavior of individual students, handwriting group, professional development.
2. Motor program, fine motor program, working with special needs individuals in my classroom; parent knowledge and involvement programs.
3. Motor skills; large and small classroom support, checklist and observations.
4. Reading support, visual memory, handwriting support, writing support, support for students with behavior problems/ADD, ADHD and learning difficulties.
5. Advice, intervention strategies, extra help, TOT.
6. IEPs with students, advice and instructional strategies to help with students in classroom.

7. Project First Step, motor skills, lesson development, co-teaching, modeling, personal plans for students, IEPs, adapting curriculum for special needs, sight-word practice, visual memory, and probably many more things.
8. Child study sessions; motor training; visual memory training; math, reading, and writing instruction; social work support; speech and language support.
9. Motor skills, reading, math, writing, small group work.
10. Small group help in math, IEP, organization skills.
11. Penmanship, math skills, spelling, reading, visual memory, large/small motor skills, etc.
12. Art has been very helpful with one student in my room.
13. Intervention services as well as strategies to use in the classroom.
14. Management ideas. Motor skills – large/small. Conflict resolution help. Direct instruction with students. Reading/math support. Parent support group.
15. Instructional support in the classroom.
16. I have received the support of team members through beginning phase meetings all the way to full evaluations of students.
17. Last year I had three students involved in the IST process. The IST professionals offered helpful suggestions and strategies to increase student achievement.
18. Strategies to help with behavior problems, listening, following directions and lower academic students. Ways to record growth.
19. Support for struggling students.
20. Support with ideas for things I can do to help students.

21. Support for several students – ideas to help students achieve success.
22. Strategies for a very disorganized student; start up “log-on graph” for slow processing student.
23. Early intervention and suggestions on how to help my students.
24. I have received new strategies and ideas from the IST.
25. Last year I brought three students to IST.
26. Help with students who are having difficulties with learning.
27. None recently. Advice for a student in the past.
28. Behavioral, academic goals set for students in my room.
29. Not a lot as I haven’t requested much. The team and I are brainstorming strategies for a low achiever. That’s about all I’ve done so far.
30. First Step, social worker help, reading help, foreign language (English as a second language) help.
31. Motor class and individual plans (academic).
32. Movement.
33. None.
34. Speech/language, phonetic awareness – writing, reading.
35. Reading support, vocabulary.
36. Reading and math support.
37. Manipulatives, individualized instruction time, classroom helpers, advice and suggestions.
38. The services have not begun this year. Last year I had assistance in math.

39. Speech, motor, social work, Reading Start, Letter Club, resource room.
40. Help with special needs students.
41. This year, help learning how to administer reading tests and suggestions for boosting spelling and reading comprehension for a child who is behind (not special education). Also, reading specialist has come in to give him a little extra "one-on-one" reading help (not on a regular basis).
42. Consultation on students, suggestions and ideas for the classroom.
43. Pull-out instruction, in-class support.
44. I have discussed concerns and made plans to implement for a number of my students.
45. I am currently involved in re-teaching, pull-out services, goal-setting academic meetings.
46. Currently receiving help with students below grade level in reading. Just started this a few weeks ago. Just today started receiving more assistance in math.
47. Reading services only. Reading inventory.
48. Reading boost, speech and language, school psychologist.
49. Speech/language, small motor co-teaching, reading. Start good Motor Club.
50. I'm still waiting for feedback from data sent on the blue card kids. This will come shortly. I'm sure...reading start, motor club, Letter Club.
51. Brainstorming/strategizing difficult student/parent situation, Letter Club, fine motor activities, reading start.

52. None. I have been told I would receive services and it does not happen. When I inquired as to meeting to follow-up our original question, I was asked, "What do you need?" I need the follow-up they promised—a plan to benefit the child.

53. Occasional AM meeting. Testing.

54. Occasional AM meeting. Testing.

55. Occasional AM meeting. Testing.

56. Occasional AM meeting. Testing.

57. Occasional AM meeting. Testing.

58. I have gotten very little support from IST. The response is lots of paperwork and "Get back with us if you need help."

59. Whole class fine motor.

60. Speech—which is very helpful as the speech teacher comes in to help identify students and then works with them individually on specific areas. Motor Moms and motor activities.

61. Small motor, speech, reading start.

62. Reading services, testing.

63. Some individual testing.

64. In class support, students go for help, ESL activities.

Summary of Classroom Teachers' Responses to Question About Services Received

Teachers described varied services they have received from the Instructional Support Team. Sixty-four comments were received. These responses describe their perception of many different services they associate with I.S.T. The most frequently noted services were:

Reading support:	18
Motor skill development:	15
Professional development/support:	12
Math support:	7
Fine motor:	7
Behavior:	5
Social work:	5
Speech:	5

Two comments regarding services received were clearly negative, citing lack of follow-up or paperwork requirements.

Describe your involvement in the IST process.

1. I have not taken one of my students through the "official" process.
2. Work with case manager to develop goals for special-needs children.
3. I had the chance to be a lower elementary teacher representative on the child study team for a month.
4. I meet daily with an IST member to discuss specific students' progress.

5. Talk to Shirley and Kathy about any questions/problems. Try their ideas for enhancing learning.
6. Have not been really involved other than IEPs. Communication was open throughout the process.
7. Observe, participate, report back, etc.
8. Referring individual students; interacting with IST teachers to plan for students; acting as upper elementary liaison/representative.
9. Met with IST team--mapped out what to try with student.
10. I am new to Northville and have had limited involvement.
11. Using the checklist of strategies used.
12. I have only had one student go through IST testing and support. The experience was positive.
13. I attend meetings to discuss ways to help students who receive support from the IST.
14. In addition to bringing concerns to the team, I have served as a team member during two quarters of the school year. Currently I am serving as an associate and am working with teachers.
15. I have used the IST process to gain additional strategies for working with students.
16. Classroom teacher.
17. I have met with teachers to share concerns and solicit new ideas. I love IST.

18. I am a rotating teacher as part of the team. If I have a student I need help in supporting, I use the IST process.
19. As a classroom teacher I have asked for assistance with a couple of behavior issues I had with students in past years.
20. I was involved as I described what the child needed support with. I also implemented the suggestions as offered.
21. IST teacher member (by quarter).
22. I have participated in a few meetings when I feel a student of mine needs help or strategies to help them become more successful.
23. Currently, I am using the IST process for two students. Next semester I am volunteering as a Level 2 meeting–teacher rep.
24. I am a rotating member of the IST team.
25. I started out involved, but then was taken out of the process.
26. Very minimal as a classroom teacher.
27. I feel I am an active participant in the process but often feel that I have the greatest workload once I walk away from the group, to work with IST students.
28. Brainstorming strategies.
29. I've had minimal help with students having difficulty because I haven't asked for more.
30. Meet with the team on a regular basis.
31. Meet regularly with the team to plan.
32. Meet with the team.

33. Staff meetings—process explained.
34. Monthly meetings with the team, implementing new plans and some minimal testing.
35. In the past I have had the full IST staff, and this year it is a two-member team. This may work better depending on the team members.
36. Meet with IST support to give feedback and get feedback.
37. I have had two students in the past two years which benefited from the IST program.
38. I attended the first meeting with the father, resource teachers, and principal (this year).
39. I have one child receiving speech, motor, reading start, and individual resource help. I have another child receiving speech, motor, and reading start. Two others in reading start, and one child with ODC, that has been evaluated and is being watched.
40. I work with the instructional support team to monitor student progress and set goals for struggling students. In prior school years, an IST member has come into my classroom to help with special-needs students.
41. I see a problem, call a meeting, members meet with me, we brainstorm, ideas are recorded, goals are set, members help out as I try to have student reach goals using brainstormed methods.
42. I have asked for meeting for three to four students and implemented their plans.

43. I voice my concern, discuss concerns of student progress, enter into a contract and use information from discussion to follow through with student.
44. Chance to discuss struggling students and be given help/ideas for specific areas of difficulty.
45. Limited—I do not know what the students do there, nor am I ever asked what support I think they need.
46. Most IST members are helpful and informative. The process has become slow and frustrating.
47. I sent in four blue cards and had a meeting on two kids. I set my goals for them. The second meeting was sharing data I collected. My questions and concerns about reading issues are always prompt and helpful.
48. I am still a bit confused about how the process works. Aside from what is listed in #25, there hasn't been any other involvement.
49. It takes a lot of my time, and nothing is followed up on.
50. Never invited to a meeting. Never heard anything back about my blue card.
51. Have been invited to one this year.
52. I have attended meetings. Fill out blue forms.
53. I have been invited to one this year.
54. I have attended meetings. I have filled out a number of different forms regarding my students.
55. I have contacted the IST with concerns regarding several students. Jay Hillard and Sue Tonkovich are on top of things, as is Bruce T.

56. Referral.

57. Refer children.

58. Very little.

59. Make recommendations, daily and weekly communication with IST team members.

Summary of Teacher Responses to Question about their involvement in the IST Process

Teacher perceptions of their involvement in the IST process vary significantly.

Some teachers describe minimal involvement: "I am new to Northville and have had limited involvement."

Others clearly have become more involved. "In addition to bringing concerns to the team, I have served as a team member during two quarters of the school year. Currently I am serving as an associate and am working with teachers."

A few remarks are negative: "I do not know what the students do there, nor am I ever asked what support they need."

Some teachers clearly understand the intent of the IST process: "I see a problem, call a meeting, members meet with me, we brainstorm, ideas are recorded, goals are set, members help out as I try to have student reach goals using brainstormed methods."

Of the forty-nine responses to this question, 11 indicate low-frequency (2 or less) involvement with IST while 15 indicate regular or high-frequency (5 or more) involvement.

**How has your involvement with the IST generalized
to other students in your classroom?**

1. Techniques can often be applied to other students. Motor skills have become a part of daily practice.
2. I have considered techniques and strategies and then used them in class so all kids benefit.
3. I've learned strategies and ideas that have helped other students in my classroom.
4. I use strategies learned from IST for all students who may benefit from them.
5. Their ideas work for most children. Keeps me updated on strategies.
6. Yes.
7. Keener awareness of adaptable strategies for individuals.
8. Thinking through problems using same model.
9. It has given me some strategies that I can use in general lessons.
10. Additional ideas/techniques are useful with most students.
11. My involvement has made me pay closer attention to modifications, intervention strategies and student strengths.
12. Yes. I was able to use the strategies I learned with other students.
13. Other students use charts, strategies which help show student modeling behaviors.
14. Often, strategies that are suggested for one student apply and make sense for others.
15. Strategies I learn about work for other students as well.

16. Hearing the thoughts and strategies of others broadens my knowledge of how to effectively work with all children.
17. Some suggestions are used with the whole class. Better teaching.
18. I've seen a bigger picture on how to apply stats and ideas. I've learned and also share to train my student teacher.
19. Some of the suggestions can be used with the whole group as it helps an individual student. The whole class benefits.
20. My involvement has generalized to my other students by using new approaches.
21. Ideas generated have been applied to others and encouraged me to think of plans that work with the whole class.
22. I don't always refer students to IST that have similar issues because I can now assess and goal-set using the IST process on my own.
23. It makes me more aware of the needs of my "low kids."
24. Social issues, techniques for learning and teaching.
25. I have used some techniques with my class in general.
26. I can apply strategies to all students.
27. All students benefit with two people in the room supporting student learning.
28. It helps other students who struggle.
29. I have been able to implement some suggestions with other students in the class.
30. Other students have benefited from having additional support nearby.

31. It really hasn't gone into the classroom.
32. We had a teacher who came in the classroom to help us.
33. I've used some of the same comprehension strategies/lessons with the whole class and small groups as suggested for the boy I referred.
34. Strategies that can be applied to all students in a classroom setting.
35. Yes, I use a lot of what the student needs for the whole class.
36. When IST members are in the classroom, all students can receive additional help.
37. Any adaptations made may be applied to other students, and smaller group size with co-teaching is a benefit.
38. I am hoping with someone now in my classroom I will see more of that (just started today).
39. Co-teaching.
40. What is meant by "other" students? Most of the things we do in class related to IST are for all students.
41. Only from Jay Hillard.
42. No.
43. No.
44. No.
45. Individuals are occasionally helpful.
46. IST motor activities are always done with the whole group. Many similar things have been done by some classroom teachers for a long time.

Summary of Classroom Teachers' Responses to Question About Generalizing IST Learning to Other Students

When asked if involvement with the IST has generalized to other students in their classroom, forty-six teachers made comments. Thirty-six note clear patterns of improved teaching strategies which generalized to other children. "My involvement has made me pay closer attention to modifications, intervention strategies and student strengths, "is a good example.

Six teachers made comments that do not clearly indicate a positive or negative response, i.e. "We had a teacher who came into the classroom to help us."

Four responses were negative, i.e. "No".

What benefits for students have you observed?

1. Improved small motor skills, terrific materials, IST teachers know students and give important information to the next year's teacher.
2. Better handwriting, reading, and writing skills.
3. Additional one-on-one time, fine-motor kits for struggling students, increase in large motor skills.
4. Greater achievement, less frustration, enjoyment of school, greater success academically and socially.
5. Trying alternative strategies to enhance learning helps for meeting the individual needs of students.
6. IST-Peer mediation! Great program-students solve problems on their own!

7. Structure/organization of certain lessons allow for a keener awareness of all students, behavior charts allow self-improvement, comfort levels rise.
8. Stronger student achievement and sense of competency.
9. One-on-one help, someone other than the teacher helping them to be successful.
10. Increased reading/phonics/comprehension skills.
11. Better work habits. Confidence in their abilities.
12. It has taught some skills that students can use to make work easier.
13. Improved sense of well-being in room. I have more techniques, am more consistent, and am better at working with students of all levels.
14. Increased confidence and ability to complete more assignments.
15. I have observed students making better choices for themselves and conquering challenges such as turning work in on time.
16. Instruction is more differentiated, which helps students achieve more.
17. Improved listening skills, and following directions.
18. When students feel supported they tend to become greater risk takers and more active participants.
19. Use of strategies.
20. Greater understanding brings greater successes!
21. More benefits for the whole class in teaching strategies and cooperative learning.

22. More feelings of flexibility, caring, fairness. That's also seen by parents of students who I work with more closely due to IST issues.
23. Students have become more organized, work more carefully, and use reading strategies.
24. The ability to succeed, help when they need it most.
25. Quicker help than if a child had to wait to go to child study. Smaller problems can be addressed.
26. More work done by student. Hopefully more learning by students.
27. Very little.
28. I see academic and behavioral improvement; it's not always major changes like I would like to see, but it's small steps.
29. A greater willingness to search for a level of success that's individually appropriate (rather than just giving up).
30. Learning benefits from extra teaching help; learning benefits from teaching team.
31. Improvement in reading and writing. Students' self-esteem improves.
32. Slowly improving on objective we are working on with teacher(s) support.
33. Improved fine and large motor skills.
34. Increased sight-word vocabulary, confidence.
35. They remember more. When all students use visual memory strategies and having more than one adult to "check in with" makes those students who need time to receive it.

36. Extra one-on-one support, smaller group sizes, and an extra person to answer questions.
37. Increased confidence and guidance is more readily available for the students.
38. It is helpful to meet about a student, plan some goals, and hopefully accomplish them.
39. They have become more confident, and it raises their self-esteem.
40. Another adult in the classroom can lower teacher/student ratio.
41. Larger pool of teaching ideas from which I can draw.
42. Good review.
43. Different ideas to implement. Students receive additional assistance in the classroom, as well as being pulled out in small groups.
44. Student questions are answered quicker. I know strengths/weaknesses of students and can zero in on them quicker. I can easily practice strategies suggested by the IST team.
45. More one-on-one and very small group time with students who really need it in reading. Hopefully the same will follow in math.
46. I am grateful for our Reading Boost Program and our Speech and Language Program. Fabulous support with the child and teacher in mind!
47. Wide variety—speech/language, fine/large motor, reading skills.
48. Improved handwriting—tracking while reading—beginning to space words better, writing more sounds—feeling good about reading.

49. I believe that all the fine and gross motor activities going on are beneficial to students and their learning success.
50. Some students have received lunch time help.
51. I am grateful for our Reading Boost and our speech programs.
52. I am grateful for our reading boost and speech and language program.
53. More specific activities planned and implemented by IST for certified at-risk children might benefit these children more.
54. Reading Start–improvement in reading skills.
55. Some reading improvements.
56. Individualized curriculum for needy students, one-on-one attention, improvement with basic skills.

Summary of Classroom Teachers' Responses to Question About Benefits for Students

Teachers made fifty-six comments about the benefits to students they have observed. Of these, fifty-five were positive, and one was negative.

Benefits to students noted included greater reading success (11), greater achievement in the class (12), and alternative teaching strategies (9).

General Comments

1. The expertise, involvement, and dedication of our two Mrs. Thompsons (Kathy and Shirley) is a tremendous asset to our school. Our at-risk kids are in good hands, and the classroom teachers have much-needed support.

2. I feel that my students and myself have benefited from TC's IST team. Shirley works with my kindergarten students regularly, and she is well liked by both of my classes. Kathy Thompson's dedication and hard work with implementing the Motor Program has been wonderful. I've seen growth in my students' motor skills. Our IST team is what makes Thornton Creek's students successful.
3. Kathy and Shirley are always helpful when I need help and support with students, but especially with parents. Our school is very fortunate to have two people that are dedicated to helping all children. I have received a lot of new ideas from their "mini" workshops/open houses too. All their work is appreciated so much.
4. I feel that my [Thornton Creek's] IST is of utmost importance in our school. Being a third-year teacher, I have received tremendous support that I will continue to use throughout my career. My IST will bend over backwards to ensure the best education available for each student in our school. They are the BEST!!!
5. This is a fabulous program! Our staff knows how to work with staff, students, and parents. I have been especially impressed with the parent support groups. The first-grade team is very enthusiastic about the large motor skill program and our fine motor skill boxes. I am also thankful for the conflict resolution program that has been initiated.
6. IST eliminates the "isolation" of teaching. It allows teachers to seek assistance, ask questions, and share ideas. It is through the process of IST that teachers can begin to develop collaborative relationships with colleagues and the confidence to ask for help when dealing with difficult situations.

7. I think IST provides an excellent support system for teachers and helps us all get better at reaching all students' needs.
8. I really feel the "liaison" position is critical to the IST process. This helps to reduce the paperwork for teachers and allows the pair to better focus on the students' needs. I also like the baseline sheet. It has been helpful to track the progress of my students.
9. Thanks for your dedication, IST team!
10. The amount of involvement from the co-teacher is not consistent throughout the pool of personnel.
11. It is very reassuring to know that if you have a concern about a student you can get some help quickly without having to go through a long, drawn-out process.
12. Seemed to take a very long time to actually get a person to "come in" the classroom, as I have no one identified as "special education." I think it would be very helpful, as it has in the past, to have that person in the classroom.
13. I used to get support with some of the more demanding aspects of our curriculum. Now I do not. Some kids really struggle, and I feel that they could use extra support in the classroom. Math and science and the writing demands are very hard on some of the children.
14. This was difficult. Each IST member has unique skills and provides unique services. The members cannot be lumped together as one.
15. Many of the questions on the survey were difficult to answer. There is much more dialogue that should take place regarding the IST process, and simply agreeing

or staying neutral won't help improve our relationships and efforts in helping our students.

16. My experience with one member of the IST team has been very negative. She first came to me and questioned our classroom management/ teaching and asked us to make changes that were unreasonable. I expressed that it would be helpful to know the needs of specific students. We agreed to meet to discuss different grade levels—it has never happened. When I e-mailed to inquire about when we can meet I got a note back saying, "What do you need—are you having problems?" Why is there no follow-through? On another occasion we agreed to meet about a specific student who needed to be removed from the classroom one day per week (too many transitions). When we met to make the plan, she was unprepared and late. The classroom teacher had already taken care of parent approval, which the IST member had not taken care of. I'm at a loss as to understanding what she does, and I don't want to lump other IST members into this. These are my experiences, but I've heard of many more from other staff about this person. In the time I have spent at Winchester, this year I have had the most contact and the least accomplished. I find this very frustrating and insulting to the IST members and staff who work hard every day to benefit students.
17. This survey was difficult to fill out because of the wide variety of services and different personnel.
18. I feel I would benefit from more help in the classroom. The children that require extra or one-on-one help need someone to stay on track with the class.

19. I feel I need help with students in my classroom. Many kids need one-on-one help at different times with various concepts in all subject areas. I need help—not meetings and checklists and evaluations.

Summary of General Comments from Classroom Teachers

Nineteen teachers made general comments. Of these, six praised specific IST members, three noted the positive support process for teachers, two indicated slow IST response, one indicated quick response, three noted the varied skills of IST members, one criticized a specific IST member, one criticized the process of meetings and problem – analysis.

Parents' Responses

Parents' responses to items on the Parent Questionnaire are presented in the following pages. As before, each question is stated, followed by parents' responses to that question.

From your viewpoint as a parent, what is the purpose of the Instructional Service Team?

1. The purpose is to help the child in areas where they are behind.
2. To give extra support when needed.
3. To aid in the learning of children who need more than what the classroom environment provides. Is it made up of special teachers?

4. To supplement the existing curriculum; to meet the special needs of children who cannot get extra help from the regular classroom routine. To receive assistance from professionals who are experts in a specific area, i.e., reading, speech.
5. Make him or her be ready to work on his own.
6. To help those children who need extra help in learning and in the classroom, i.e., fine motor skills, attention span. The IST also assists the teacher to make the classroom a good environment for everyone.
7. Reading and writing special assistance.
8. To provide additional support/teaching for students who need more work in certain subjects.
9. To provide extra and individualized instructional support for each child.
10. Remedial help, although I wish it could also provide enrichment opportunities for advanced learners.
11. To assist my child in areas which she needs extra help in and to help her develop skills to overcome her weaknesses.
12. Extra help for children who need help progressing to their appropriate level.
13. Improve the skills of the student in an academic area in which the student needs extra help.
14. The purpose of the Instructional Support Team is to provide extra support for children who may need help.
15. To help as a parallel classroom, to give instruction where needed to keep the child caught up with the classroom work.

16. Give additional help to children that need it.
17. They are supportive, cooperative, and very helpful at all times.
18. To help improve her reading and phonics skills.
19. To provide additional training and education above and beyond what the children learn in their regular classroom settings.
20. To help educate and support children and their parents.
21. Provide additional instruction to students needing more help in my case, help the child speak clearer.
22. The purpose is to help the child in areas where they are behind in.
23. To assist the teachers and benefit the children with additional learning skills not covered in class. The IST demonstrates a different method or technique in learning, because not every child learns the same. Children benefit in class with additional assistance the IST provides. It gives the children confidence and self-esteem and willing to learn more. Finally, it helps us as a family to learn and share with our children to succeed.
24. To help provide the student extra support in academic areas which he/she may need. These services compliment the regular classroom instruction while providing smaller group instruction and motivational techniques along with the specialized reading instruction.
25. Support students through classroom support as need arises as well as motor development program (both fine/gross motor) at home and school.

26. To provide added help and instruction for the students in whatever area they need it.
27. To help those needing extra assistance.
28. The team provides necessary/additional services to individual children in areas that need support as well as enrichment services to all 1st [graders] and kindergartners in the area of gross motor skills.
29. To give additional help to students at risk.
30. The team provides take-home kits that you can use to help your child. We as parents would like to see the team work with our child at school.
31. We assume IST consists of services like motor skills and psychologists. Based on this assumption, the purpose is to augment classroom activities in these areas.
32. To help students who need extra help. It gives them one to one or small-group attention.
33. To help my child develop skills which enable him to work at his potential level.
34. To help my child with reading and her speech.
35. To assist children who have learning disabilities by giving individual instruction.
36. To help Kiara excel in the area(s) she is weak. In addition, give her the one-on-one attention she needs to comprehend.
37. The Instructional Service Team is in place to assist those children that need additional help in the most "normal" situation.
38. To support students both in and out of the classroom and work with teachers to help them better support students.

39. To help the children learn better.
40. Support/supplement teacher instruction.
41. To put in place strategies within the general education setting which will help students function better behaviorally and academically.
42. To help children through learning difficulties. It's extra support for the child. It helps children who are behind to catch up with their class.
43. To support parents in instruction of student. To support student in extra help at school.
44. To meet and communicate instructional progress or needs. They answer questions regarding services and provide academic support if needed. They also provide academic testing if necessary.
45. To supplement the curriculum with specific enhancements that help children's individual needs for future learning assistance and assessments!
46. To provide support to classroom teachers/programs. To implement early intervention techniques directly to students as well as inservice classroom teachers.
47. In my viewpoint the purpose of the IST is to supplement the teaching staff to meet the needs of the children, more one on one that can't be done in the regular classroom.

**Summary of Parent Responses to the Question About the Purpose of the
Instructional Support Team**

Parents made forty-seven comments regarding the purpose(s) of the Instructional Support Team.

The most common perception of the purpose of the IST was to provide extra help to students in need. Thirty-eight parents made this observation.

Eight parents noted the IST's role in helping the teacher develop new instructional strategies, or to better differentiate instruction.

Only five comments noted the IST's role in supporting parents as they work with their children.

Three parents noted the IST role of helping children becomes able to succeed on their own, without extra help.

As a result of the IST process, what benefits have you observed for your child?

1. He has only had speech through Thornton Creek.
2. Improved reading skills.
3. I'm confused. Please inform with further details.
4. Improved speech, one child exiting the program after a year of services! Extra help in fine motor development through the take home kits.
5. I think he is getting ready to do his work more confidently.
6. Help in his fine motor skills, met with an IST member so she is aware of my child's needs.
7. She just started about two weeks ago, but I expect her fine motor skills to increase.
8. He is now a much better reader and speller as a result of this extra class.

9. Cole is becoming more social, he can now concentrate for longer periods.
10. Too early to tell.
11. Meghan has gained great confidence in herself and her abilities in the classroom.
12. Self-esteem is up. Is making steady progress to where he needs to be at his grade level.
13. Leslie's reading ability has improved as she uses techniques learned in reading workshop.
14. Improved reading due to strong phonics.
15. Improved reading skills. Enthusiasm for school.
16. She is responding positively to the individual help—it has been an easy start for her because she has seen immediate positive results.
17. She should be able to catch up to the rest of the class.
18. Reading, spelling and writing.
19. She has a stronger interest in reading and seems more confident. She loves to read to us now, and I feel her reading is improving.
20. He just started the small motor skills group, so it is too soon to tell. We both benefit from the "Love and Logic" information every day.
21. My child's speech is improving. She is much easier to understand.
22. She has had reading and math help. We have noticed an improvement in both areas.
23. Mainly increased confidence and motivation with reading.

24. The fine motor homework packets helped Andrew's specific need for practice—grip practice helped him to become more aware of and in control to proper pencil grip.
25. My child has made great strides in reading, phonics, and vocabulary from first to second grade. The reading workshop program is wonderful! Please continue this program for future students needing it.
26. I see the kindergarten/first grade children dramatically mature over weeks and months as I assist in providing motor skills during the school year.
27. Pride in himself and his ability to learn.
28. We have not observed any benefits from the IST process. However, the IST teacher tutored our child in the summer and it helped a lot.
29. Motor skills help, Love and Logic support, help dealing with behavior.
30. My child's reading is improving. Her spelling test scores are higher. She enjoys working with the IST teachers. This extra help is really making a difference and improving my daughter's self-esteem!
31. He continues to learn new strategies for learning reading skills. He is able to perform better due to the support he receives in all areas.
32. She is speaking better and she is reading better.
33. She has markedly improved in her reading, handwriting, and math.
34. I've observed Kiara has been able to grasp the math a little better.
35. He receives extra assistance to help understand and complete work assignments both in the classroom and with homework.

- 36. Increased organization, developing better social skills.
- 37. He has learned more. Also he has learned his manners better.
- 38. Education strengthened.
- 39. Eric has a much more positive attitude towards writing, which he did not like at all before.
- 40. The teacher and I have an open line of communication, and it is good to know there are resources to consult with as difficulties arise. I feel like everyone has tried to deal with Brian's issues in a way that is positive and not negative for him. Having several people to brainstorm was good, rather than the teacher and I being alone in it.
- 41. I have seen an improvement in my child's reading and understanding.
- 42. Better knowledge of subjects he's working on at school. More confidence in himself.
- 43. Reading progress is improved. Confidence and self-esteem is high.
- 44. Whenever you can give a child learning time in smaller groups, or better yet, individual attention, they will benefit greatly – especially when developing the skills they need to process in early elementary.
- 45. Improved reading skills. Improved parent awareness of new techniques to improve reading, math, and motor skills.
- 46. This is our first year at the school, so we haven't really experienced the IST, other than the Motor Moms program.

A summary of Parent Responses to the Question About Benefits to Their Child

1. Parents noted improved reading (16), self-confidence(7), fine-motor (6), speech (4) and general achievement (5) as benefits for their children. Improved math skills, social skills, behavior, gross-motor skills and parent learning were also noted.

Comments

1. The fine motor box is wonderful!! So much time and effort went into all of the activities. This program is such a help to all that need it.
2. Thank you for your continued support in Meghan's education.
3. He may need instructional support in math in addition to reading.
4. I believe more teachers are needed for the lower level. If this were possible, I believe less students in the upper level would need assistance.
5. What a great program—I wish my fifth grader had had the same support in the early grades!
6. Please let us know if the team could work with our child at school.
7. We value this program and the individuals who run it.
8. I would like more frequent updates as to what is being worked on and how often. Perhaps even who all is providing the assistance.
9. The IST is very dedicated and motivational!

Summary of Parent General Comments

Of nine general comments, no clear patterns emerge. Four parents expressed thanks for the program. One elaborated on the fine-motor development for her child.

One indicated her belief in the need for even more early elementary support. One asked for more communication with parents.

REFERENCE LIST

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- Aaron, P. G. (1997). The impending demise of the discrepancy formula. *Review of Educational Research*, 67, 461-502.
- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Adams, M. J. (1991). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Adams, M. J., & Bruck, M. (1995, Summer). Resolving the "great debate." *American Educator*, 19(2), 7-20.
- Alexander, K. L., & Entwisle, D. R. (1988). *Achievement in the first two years of school: Patterns and processes* (Monographs of the Society for Research in Child Development, Serial No. 218) 53, 2.
- Allington, R. L., & McGill-Franzen, A. (1996, August/September). Why is Congress caving in on IDEA reform? *Reading Today*, 6.
- Allington, R. L., & Cunningham, P. M. (2001). *Schools that work: Where all children read and write* (2nd ed.). New York: Longman.
- Allington, R. L., & Walmsley, S. A. (1995). *No quick fix: Rethinking literacy programs in America's elementary schools*. Barksdale, NJ: International Reading Association.
- Barnett, W.S. (1996). *Lives in the balance: The Age-27 benefit-cost analysis of the High/Scope Perry Preschool Program*. Ypsilanti, MI: High/Scope Press.
- Berninger, V.W. (1998). *Process assessment of the learner: Guidelines for intervention*. San Antonio, TX: The Psychological Corporation.
- Berninger, V.W. (1999). Coordinating transcription and text generation in working memory during composing: Automatic and constructive processes. *Learning Disability Quarterly*, 22, 99-112.

- Berrueta-Clement, J.R., Schweinhart, L.J., Barnett, W.S., Epstein, A.S., & Weikart, D.P. (1984). *Changed lives: The effects of the Perry Preschool Program on youths through age 19*. (Monographs of the High/Scope Educational Research Foundation, No. 8). Ypsilanti, MI: High/Scope Press.
- Blum, R.W., Beuhring, T., Rinehart, P.M., (2000). *Protecting teens: Beyond race, income and family structure*, Center For Adolescent Health, University of Minnesota, 200 Oak Street SE, Suite 260, Minneapolis, MN.
- Blum, R. W., Beuhring, T., Shew, M. L., Bearing, L. H., Sieving, R. E., & Resnick, M. D. (2000). The effects of race/ethnicity, income and family structure on adolescent risk behaviors. *American Journal of Public Health*, 90 (12).
- Campbell, F. A., & Ramey, C. T. (1999). *Early learning, later success: The Abecedarian Study—Early childhood educational intervention for poor children: Executive summary*. Retrieved from http://www.fpg.unc.edu/~abc/embargoed/executive_summary.htm.
- Capute, A. J., Accardo, P. J., & Shapiro B. K. (Eds). (1994). *Learning disabilities spectrum: ADD, ADHD, and LD*. Baltimore: York Press.
- Caughy, M. O., DiPietro, J., & Strobino, M. (1994). Day-care participation as a protective factor in the cognitive development of low-income children. *Child Development*, 65, 457-71.
- Clay, M. M. (1993). *An observation survey of early literacy achievement*. Portsmouth, NH: Heinemann.
- Coleman, M., Rowland, B., & Hutchins, B. (1997, November). *Parents as teachers: Policy implications for early school intervention*. Paper presented at the annual meeting of the National Council on Family Relations, Crystal City, VA.
- Commission on Excellence in Special Education. (2002). *A new era: Revitalizing special education for children and their families*. Retrieved from www.ed.gov/inits/commissionsboards/whspecialeducation/reports/pcesefinalreport.pdf.
- Consortium for Longitudinal Studies (Ed.). (1983). *As the twig is bent . . . lasting effects of preschool programs*. Hillsdale, NJ: Erlbaum.
- Copple, C. E., Cline, M. G., & Smith, A. N. (1987). *Path to the future: Long-term effects of Head Start in the Philadelphia School District*. Washington, DC: U.S. Department of Health and Human Services.

- Council for Exceptional Children. (1997). Reading difficulties vs. learning disabilities. In *CEC today*. Reston, VA: Author.
- Cowan, P., Cowan, C., Schulz, M., & Heming, G. (1994). Prebirth to preschool family factors in children's adaptation to kindergarten. In R. Parke & L. Kellam (Eds.), *Exploring family relationships with other social contexts*. Hillsdale, NJ: Lawrence Erlbaum.
- Cunningham, P. M., & Allington, R. L. (1998). *Classrooms that work: They can all read and write*. New York: Addison Wesley Longman.
- Currie, J., & Duncan, T. (1995). Does Head Start make a difference? *American Economic Review*, 85(3), 341-364.
- Drazen, S., & Haust, M. (1996). *Lasting academic gains from an early home visitation program*. Binghamton, NY: Community Resource Center.
- Duane, D. D., & Gray, D. B. (Eds.). (1991). *The reading brain: The biological basis of dyslexia*. Baltimore: York Press.
- Ellis, A., & Fouts, J. (1997). *Research on educational innovations* (2nd ed.). Princeton Junction, NJ: Eye on Education Publishers.
- Entwisle, D. (1995). The role of schools in sustaining early childhood program benefits. *Future Child*, 5, 133-144.
- Entwisle, D. R., & Alexander, K. L. (1989). Early schooling as a "critical period" phenomenon. In K. Namboodiri & R. G. Corwin (Eds.), *Sociology of education and socialization* (pp. 27-55). Greenwich, CT: JAI Press.
- Fay, J. (2001). The classroom of your dreams. *Preventing Early Learning Failure*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Fay, J., & Funk, D. (1995). *Teaching with love and logic*. Love and Logic Press.
- Fletcher, J. M., Francis, D. J., Shaywitz, S. E., Lyon, G. R., Foorman, B. R., Stuebing, K. K., & Shaywitz, B. A. (1998). Intelligent testing and the discrepancy model for children with learning disabilities. *Learning Disabilities Research and Practice*, 13, 186-203.
- Flexer, C. (2001). Enhancing the listening environment for early learning success. *Preventing Early Learning Failure*. Arlington, VA: Association for Supervision and Curriculum Development.

- Fowler, M. G., & Cross, A. W. (1986). Preschool risk factors as predictors of early school performance. *Journal of Dev Behav Pediatr*, 7(4), 237-241.
- Garmezy, N. (1994). Reflections and commentary on risk, resilience and development. In R. J. Haggerty, L. Sherrod, N. Garmezy, & M. Rutter (Eds.), *Stress, risk, and resilience in children and adolescents: Processes, mechanisms, and interventions* (pp. 1-19). New York: Cambridge University Press.
- Gickling, E. E., & Armstrong, D. L. (1978, November). Levels of instructional difficulty as related to on-task behavior, task completion and comprehension. *Journal of Learning Disabilities*, 32-39.
- Gickling, E. E., & Rosenfield, S. (1995). Curriculum-based assessment. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (pp. 587-595). Washington, DC: National Association of School Psychologists.
- Graham, S. (1999). Handwriting and spelling instruction for students with learning disabilities: A review. *Learning Disability Quarterly*, 22, 78-98.
- Hartman, W. T., & Fay, T. A. (1996). *Cost-effectiveness of instructional support teams in Pennsylvania* (Policy Paper No. 9 of the Center for Special Education Finance). Palo Alto, CA: American Institutes for Research.
- Haskins, R. (1989). Beyond metaphor: The efficacy of early childhood education. *American Psychologist*, 44, 274-82.
- Honig, B. (1996). *Teaching our children to read: The role of skills in a comprehensive reading program*. Thousand Oaks, CA: Corwin Press.
- Husen, T., & Tuinman, A. (1991). The contribution of formal schooling to the increase in intellectual capital. *Educational Researcher*, 20(7), 17-25.
- Jensen, E. (1998). *Teaching with the brain in mind*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Jester, R. E., & Guinagh, B. J. (1983). The Gordon Parent Education Infant and Toddler Program. In Consortium for Longitudinal Studies (Ed.), *As the twig is bent . . . lasting effects of preschool programs* (pp. 103-132). Hillsdale, NJ: Erlbaum.
- Johnson, T. R. (2001). Project first step: The connection between fundamental physical skills and academic learning. In B. Sornson (Ed.), *Preventing early learning failure*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Juel, C. (1996). What makes literacy tutoring effective? *Reading Research Quarterly*, 31, 268-289.
- Kline, P. (1988). *The everyday genius*. Arlington, VA: Great Ocean.
- Kline, P. (2001). Teaching to all of a child's intelligence. *Preventing early learning failure*. Alexandria, VA: Association for Supervision and Curriculum Development..
- Kovaleski, J. F., Gickling, E. E., Morrow, H., & Swank, P. R. (1999). High versus low implementation of instructional support teams: A case for maintaining program fidelity. *Remedial and Special Education*, 20(3), 170-183.
- Kovaleski, J. F., Tucker, J. A., & Duffy, D. J., Jr. (1995). School reform through instructional support: The Pennsylvania initiative, Part I. *Communique* (National Association of School Psychologists), 23(8), insert.
- Kovaleski, J. F., Tucker, J. A., & Stevens, L. J. (1996). Bridging special and regular education: The Pennsylvania initiative. *Educational Leadership*, 53(5), 44-47.
- Locurto, C. (1991). Beyond IQ in preschool programs? *Intelligence*, 15, 295-312.
- Lowery, L. (1998). Curriculum reflects brain research. *Educational Leadership*, 56(3), 27-30.
- Lyon, G. R. (Ed.). (1994). *Frames of reference for the assessment of learning disabilities: New views on measurement issues*. Baltimore, MD: Paul H. Brookes Publishing.
- Lyon, G. R. (1995). Research initiatives in learning disabilities from scientists supported by the National Institute of Child Health and Human Development. *Journal of Child Neurology*, 10(1), 120-126.
- Lyon, G. R. (1997). Report on learning disabilities research. Testimony given before the Committee on Education and the Workforce in the U.S. House of Representatives, July 10, 1997. Available from www.ldonline.org.
- Lyon, G. R. (1998). Report on learning disabilities research supported by the National Institute of Child Health and Human Development. Address to the Committee of Labor and Human Resources of the U.S. Senate, April 28, 1998. Available from www.rlae.com/edarticles.htm.
- Maryland Department of Education. (2001). *Children entering school ready to learn*. Baltimore: Author.

- Marzano, R., Guzzetti, B., & Hutchins, C. (1984). A study of selected school effectiveness variables: Some correlates that are not causes. (ERIC Document Reproduction Service No. ED 253 328).
- McKey, R., Condelli, L., Ganson, H., et al. (1985). The impact of Head Start on children, families, and communities. Final report of the Head Start Evaluation, Synthesis, and Utilization Project. Washington, DC: U.S. Department of Health and Human Services.
- Michigan Association of Intermediate School Administrators. (1999). *Special education proposal*. Lansing: Author.
- Michigan Department of Education. (2001). *Summary of educational statistics*. Lansing: Author.
- Michigan Department of Education. (2001, March). Paper presented to the Council of Exceptional Children.
- Michigan Department of Education (2003), *Twenty-six years of special education in Michigan*. Lansing: author.
- National Research Council. (1998). *Preventing reading difficulties in young children*. Washington, DC: Author.
- Nieman, R. H., & Gaithright, J. F. (1981). *The long-term effects of ESEA Title I preschool and all-day kindergarten: An eight-year follow-up*. Cincinnati, OH: Cincinnati Public Schools.
- Olds, D., & Kitzman, H. (1993). Review of research on home visiting for pregnant women and parents of young children. *The Future of Children*, 3(3), 53-92.
- Pawlowski, K. (2001). IST in action. *Preventing early learning failure*. Arlington, VA: Association for Supervision and Curriculum Development.
- Pedersen, E., Faucher, T. A., & Eaton, W. W. (1978). A new perspective on the effects of first grade teachers on children's subsequent adult status. *Harvard Educational Review*, 48(1), 1-31.
- Pfannenstiel, J. (1989). *New parents as teachers project: A follow-up investigation*. Overland Park, KS: Research & Training Associates.
- Phillips, D. A., McCartney, K., & Scarr, S. (1987). Child-care quality and children's social development. *Developmental Psychology*, 23, 537-43.

- Pikulski, J. J. (1994). Preventing reading failure. *The Reading Teacher*, 48.
- Ramey, C., & Ramey, S. (1998). Prevention of intellectual disabilities: Early interventions to improve cognitive development. *Preventive Medicine*, 27(2), 224-232.
- Richardson, S. O. (1994). *Doctors ask questions about dyslexia: A review of medical research*. Baltimore, MD: The International Dyslexia Association.
- Riley, R. (1996). Improving the reading and writing skills of America's students. *Learning Disability Quarterly*, 19, 67-69.
- Seitz, V. (1990). Intervention programs for impoverished children: A comparison of educational and family support models. *Annals of Child Development*, 7, 73-104.
- Seitz, V., & Apfel, N. H. (1994). Parent-focused intervention: Diffusion effects on siblings. *Child Development*, 65, 677-83.
- Shaywitz, B. A., Fletcher, J. M., & Shaywitz, S. E. (1995). Defining and classifying learning disabilities and attention deficit hyperactivity disorder. *Journal of Child Neurology*, 10, 50-57.
- Shaywitz, S. E. (1996). Dyslexia. *Scientific American*, 275(5), 98-104.
- Slavin, R. E. (1996). Neverstreaming: Preventing learning disabilities. *Educational Leadership*, 53(5), 4-7.
- Sornson, B., et al. (2001). *Preventing early learning failure*. Arlington, VA: Association for Supervision and Curriculum Development.
- Sornson, N. (2001). Vision and learning. *Preventing early learning failure*. Arlington, VA: Association for Supervision and Curriculum Development.
- Sprigle, J. E., & Schaefer, L. (1985). Longitudinal evaluation of the effects of two compensatory preschool programs on fourth through sixth grade students. *Developmental Psychology*, 21(4), 702-8.
- Stevenson, H. W., & Newman, R. S. (1986). Long-term prediction of achievement and attitudes in mathematics and reading. *Child Development*, 56, 646-59.
- Torgesen, J. K. (1995). *Phonological awareness: A critical factor in dyslexia*. Baltimore, MD: International Dyslexia Association.
- Torgesen, J. K. (1998). Catch them before they fall. *American Educator*, 22(1-2), 32-39.

- Torgesen, J. K., & Wagner, R. K. (1998). Alternative diagnostic approaches to specific developmental reading disabilities. *Learning Disabilities Research and Practice*, 13, 220-232.
- Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Alexander, A. W., & Conway, T. (1997). Preventative and remedial interventions for children with severe reading disabilities. *Learning Disabilities: A Multi-Disciplinary Journal*, 8, 51-62.
- Tucker, J. A. (2001). Instruction support teams: It's a group thing. In B. Sornson (Ed.), *Preventing early learning failure*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tuscano, A. (1999, August/September). When schools fail children. *Our Children, The National PTA Magazine*, 36-37.
- Van DeWalle, J. A. (1998). *Elementary and middle school mathematics: Teaching developmentally* (3rd ed.). New York: Longman.
- Van Ijzendoorn, M., & van Vliet-Vissers, M. (1988). The relationship between quality of attachment in infancy and IQ in kindergarten. *Journal of Genetics and Psychology*, 149(1), 23-28.
- Velez, C. N., Johnson, J., & Cohen, P. (1989). A longitudinal analysis of selected risk factors for childhood psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 861-864.
- Vellutino, F. R., Scanlon, D. M., Sipay, E. R., Small, S. G., Pratt, A., Chen, R., & Denckla, M. B. (1996). Cognitive profiles of difficult-to-remediate and readily remediated poor readers: Early intervention as a vehicle for distinguishing between cognitive and experiential deficits as basic causes of specific reading disability. *Journal of Educational Psychology*, 88, 601-638.
- Vellutino, F. R., Scanlon, D. M., & Tanzman, M. S. (1998). The case for early intervention in diagnosing specific reading disability. *Journal of School Psychology*, 36, 367-397.
- Wasik, B. H., Ramey, C. T., Bryant, D. M., & Sparling, J. J. (1990). A longitudinal study of two early intervention strategies: Project CARE. *Child Development*, 61, 1682-96.
- Werner, E., & Smith, R. (1980). *Vulnerable but invincible*. New York: Wiley.

- Wheeler, W. (1994). *A study of the Missouri Parents as Teachers program and its effects on the readiness skills of children entering kindergarten in southwest Missouri public schools*. Blue Eye, MO: Blue Eye School District.
- Zaslow, M. (1991). Variation in child care quality and its implications for children. *Journal of Social Issues*, 47(2):125-39.

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