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ABSTRACT

The Neighborhood Schools Project in Iowa was designed to evaluate a new special education service delivery system emphasizing prereferral intervention, collaboration, problem solving assessment, and frequent performance monitoring. Approximately 130 students with Individualized Educational Plans at 12 schools and an equal number at comparison site schools were the subjects. Major findings included the following: teachers and principals were supportive of the collaborative model; prereferral interventions were seen as useful and resulted in fewer special education placements; problem solving assessments were found to be useful but to require significantly more time than traditional assessments; teachers gradually adopted frequent performance monitoring; there were no significant differences in academic achievement, social skills, or school behavior between students in the two delivery systems; and students in the experimental schools demonstrated significantly better self-concepts and attitudes toward school. Appended are the survey forms for regular teachers and principals, a listing of Project accomplishments, and a draft evaluation report by Laurence R. Sargent et al. titled "Promoted vs. Non-promoted Kindergarten Students in the Des Moines Public Schools, 1989-1990." This study found that the promoted students with special needs, who were provided services by itinerant teachers, generally performed better than those who were not promoted and were provided special class instruction. (DB)

Neighborhood Schools Service Delivery Project

1991-1992 Report

Prepared by

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August 1992

Evaluation Abstract

The Neighborhood Schools Project was designed to answer questions about implementation and student outcomes under a new service delivery model. The questions and results are as follows:

1. **Question:** Are teachers and principals supportive of the collaborative model and is it actually used for delivering special education to students with mild disabilities?
   Answer: Yes, regular classroom teachers and principals support use of the collaborative model and it is being implemented to a greater extent at project schools than comparison schools.
2. **Question:** Do schools actually engage in prereferral interventions and are they deemed useful?
   Answer: Yes, principals regard prereferral interventions useful. In addition, project schools make more referrals to BIC, engage in more prereferral interventions, make fewer special education referrals, and identify fewer students for special education.
3. **Question:** Are professionals including principals, teachers, and related service staff willing and able to implement problem solving assessment strategies?
   Answer: Yes and No. Principals indicated that they thought problem solving assessments had a positive potential, but they cited many problems with implementation. A panel convened to examine problems solving assessment procedures supported the value of functional assessment. At present, problem solving/functional assessment consumes 1/3 more time than traditional assessment practices. Changes to problem solving assessment procedures and training are warranted.
4. **Question:** Given classroom training based upon the Curriculum Based Measurement system, will resource teachers implement frequent performance monitoring?
   Answer: Yes, but slowly. Some teachers demonstrated extensive use of frequent performance monitoring, but adoption of the procedures by most resource teachers appears to be a gradual process.
5. **Question:** Will students' academic achievement in reading and math under the new service delivery system, be superior to students' achievement under the traditional service delivery system?
   Answer: No! There were no consistent significant differences for any measures. During 1990-1991 third grade students in comparison schools out performed students in project schools. In 1991-1992, third grade students in project schools out-performed students in comparison schools. The aggregate effect is no significant differences.
6. Will students in the new system demonstrate stronger self-concepts and attitudes toward school than students served under the traditional model?
   Answer: Yes! Students in the project schools demonstrated significantly better self-concepts and attitudes toward school than students receiving traditional pull-out services.
7. **Question:** Will students served under the new service delivery system demonstrate better social skills than students served under the traditional model?
   Answer: No! There were no significant differences between students served in pull-out and mixed model resource programs.
8. **Question:** Will students served under the new service delivery system demonstrate better school behavior than those served under the traditional model?
   Answer: No.! There were no significant difference between groups.

Neighborhood Schools Service Delivery Project 1991-1992 Report

Background and Activities

The Neighborhood Schools Service Delivery Project began as an accommodation project funded by the Iowa Department of Education in 1989. When planning the project, the developers feared that enthusiastic volunteers would create false impressions of success due to their commitment to new procedures. Consequently, they randomly selected ten elementary and two middle schools to test implementation in a non-voluntary environment. They randomly selected ten elementary and two middle schools as comparison sites. During the second year, the project came under the auspices of the Renewed Service Delivery System trial site project sponsored by the Heartland Area Education Agency. Eight elementary, three middle schools, and one high school joined the project on a voluntary basis during the 1990-1991 school year. Five elementary schools became project schools during the 1991-1992 school year. A list of schools is contained in Appendix C.

The Neighborhood Schools Project (NSP) consists of four interrelated components focused on prevention, identification, instruction, and cooperation. The original development plan included a number of successful innovations that existed on a small scale in the Des Moines schools. These included Building Intervention Cadre's (BIC), Collaborative Consultation, Curriculum Based Assessment, and Functional Assessment. Based on the directions and encouragement from the Department of Education, twelve schools wrote plans in

1989-1990 and nine schools developed building plans during 1990-1991, and six developed plans during 1991-1992.

The prevention aspect of the NSP included systemic and prereferral intervention procedures. Schools implemented systemic prevention efforts including schoolwide efforts for handling discipline, counseling programs, peer tutoring projects, schoolwide instruction of social skills and other innovations. Prereferral intervention served as the other element of the prevention focus. Building Intervention Cadres based upon a model developed at the University of Arizona and known in the professional literature as Teacher Assistance Teams formed the bulwark of prereferral intervention efforts. The purpose of the BICs is to use collaborative teams of teachers to solve learning and behavior problems as preventative actions designed to reduce placements in special education classes. During the first year of the project, participating schools made substantial reductions in the number of students placed in resource teaching program. As of 1992, the total number of schools with Building Intervention Cadres are 31 elementary, 5 middle school and one high school. The number of staff trained on BIC during the three years of the project totaled over 200. In addition, resource teachers and support staff worked informally with classroom teachers to solve learning and behavior problems of students who were not classified as disabled.

On November 18, 1990, support staff consisting of psychologists, consultants, and social workers participated in a one day inservice on problem solving assessment procedures. During the second half of the 1990-1991 school year several support teams implemented

this identification component of the NSP. These activities included identifying students requiring special education using the "Pilot Procedures for Determining Special Education Eligibility." The problem solving interventions and assessments related directly to the students program in the regular classroom and curriculum. To reduce stigma, students in need of special education services received no disability labels.

Project developers based the instructional component of the NSP upon the belief that pull-out from regular classrooms should occur minimally. They hoped to diminish transfer of learning problems, stigma, and low self-concepts that tend to occur when instruction is provided out side of regular classrooms. To accomplish this, collaborative procedures in the forms of co-teaching and collaborative problem solving were implemented to deliver specialized teaching and accommodations to students with special needs. One hundred and ten teachers participated in training on collaborative consultation during the three years of the project. A third element of the instructional component consisted of use of frequent performance monitoring using Curriculum Based Measurement procedures (Shinn, 1989). Frequent performance monitoring procedures facilitates making frequent data based decisions to modify instructional procedures when students are not succeeding academically. Approximately 100 teachers and support staff received training on frequent performance monitoring during the period from Spring of 1989 to Spring of 1992.

The cooperative element threads through the other three components of the NSP, and it has a few stand alone elements. The

notion that more can be accomplished through professional collaboration between regular education, special education and support service professionals is woven into the whole NSP. This interdisciplinary service model is exemplified by role sharing between teachers and support staff. Support staff engaged in more interventions and direct services to students, provide more consultation with teachers, and attempted to reduce their traditional roles of conducting formal assessments.

Evaluation

Two central questions and several subordinate questions formed the basis of the Neighborhood Schools Service Delivery Project evaluation.. The questions are as follows:

Central question A: Can a new special education service delivery system emphasizing prereferral intervention, collaboration, problem solving assessment, and frequent performance monitoring be successfully implemented at randomly selected school sites?

Subordinate questions:

1a. Are teachers and principals supportive of the collaborative model and is it actually used for delivering special education to students with mild disabilities?

2.a Do schools actually engage in pre-referral interventions and are they deemed useful?

3a. Are professionals including principals, teachers, and related service staff willing and able to implement problem solving assessment strategies?

4a. Given classroom training based upon the Curriculum Based Measurement system, will resource teachers implement frequent performance monitoring?

5a. Are parents accepting of the idea that students with special needs can be provided services under a new service model?

Descriptive data was collected for questions 1a through 5a.

Central Question B: Will students benefit more under the new service model than from the traditional service model?

Subordinate questions:

1b. Under the new service delivery system, will students' academic achievement in reading and math be superior to students' achievement under the traditional service delivery system?

2b. Will students in the new system demonstrate stronger self-concepts and attitudes toward school than students served under the traditional model?

3b. Will students served under the new service delivery system demonstrate better social skills than students served under the traditional model?

4b. Will students served under the new delivery system demonstrate fewer or greater problem behaviors than student under the tradition model.

A null hypothesis of no significant differences was posed for questions 1b through 4b.

During the first year of the NSP, an evaluation of K-1 programs was conducted under the auspices of the project. The K-1 program has since been dismantled. Results from that evaluation are similar to those of the NSP and are included in Appendix E.

Method

Subjects

Approximately 130 students with Individualized Educational Plans (IEPs) enrolled in the resource teaching program at the original project and an equal number at comparison site schools participated in the evaluation. Student outcome data and survey data on collaboration was collected at these randomly selected schools. Additional survey data was solicited from nineteen elementary principals of project schools.

Instruments

Survey instruments were created to collect data regarding implementation of the collaborative model by special education resource teachers. Under the instructions of the project steering committee, the survey instrument sent to regular classroom teachers and principals was kept to one page (see appendices A & B). A survey was sent to all teachers at project schools who had received training in Curriculum Based Measurement to determine

level of usage. Frequency data was collected on the use of prereferral interventions carried out by Building Intervention Cadre's and survey data was collected from principals regarding how much they valued the prereferral intervention teams. Lesley Martin (resource teacher at Moulton Elementary School) conducted a survey of parent perception regarding elements of the new service delivery model.

Student outcome data was collected in the areas of academic achievement using probes created for use with Curriculum Based Measurement techniques. These included three passage reading probes at each grade level, the Harris-Jacobs Word List, and a mixed problem math probe. Self-concept was assessed using the Self-Concept as a Learner Scale (SCAL) (Hoeltke, 1981) and school attitude was assessed using the Attitude Toward School (ATS) scale (Hoeltke, 1981). Social Skills and problem behavior were measured using the teacher form of the Social Skills Rating System (Gresham & Elliot, 1990). The social skills scale yielded separate social skills and problem behavior scores.

Procedures

To determine whether or not implementation occurred in the areas of collaboration, prereferral intervention, problem solving assessment, and frequent performance monitoring, regular classroom teachers, principals, and resource teachers from participating schools were surveyed. Regular class teachers from control sites were surveyed regarding collaboration. The surveys on

resource teacher services were given in February 1990 and February 1991. Resource teachers trained in frequent performance monitoring were surveyed in 1990 and again in 1991.

During the 1991-1992 school year, selected schools participated in an assessment of the functional assessment procedures. Three project schools conducted functional assessments and three comparison site schools conducted traditional assessments. Data was collected on time spent involved in both functional assessments and the traditional assessments. In April 1992, a panel of experts was formed to review assessment data and the IEPs that were developed as a result of the assessments. The panel was asked to make a number of judgments related to the desirability and effectiveness of the two types of assessment.

A questionnaire was sent to parents of students with disabilities in project and comparison site schools. Follow-up phone calls were made to increase the rate of response.

Results

The results of the surveys conducted during the 1990-1991 school year are reported again in this report. In addition, new survey data collected in the 1991-1992 school year is reported regarding use of Curriculum Based Assessment procedures and parent perceptions.

Central question A: Can a new special education service delivery system emphasizing

prereferral intervention, collaboration, problem solving assessment, and frequent performance monitoring be successfully implemented at randomly selected school sites?

The answer to this central question will be provided in responses to the subordinate questions.

Subordinate Question #1a: Are teachers and principals supportive of the collaborative model for delivering special education to students with mild disabilities?

To determine the implementation of a collaborative model for providing resource teaching services, regular classroom teachers and elementary principals survey responses were tabulated. Eighty survey forms were randomly distributed to regular classroom teachers at project and comparison elementary schools. Fifty-four teachers (67%) responded at project sites and 47 teachers (59%) responded at control sites. Fourteen of nineteen elementary principals (74%) responded. Results from the teacher survey are indicated on table 1 and the results from the principal survey are reported on table 2.

The regular classroom teacher survey focused on whether or not the resource teacher provided services in that randomly selected teacher's classroom.

Table 1

Results of Regular Classroom Teacher Survey

1. Randomly selected regular classroom teachers reported that resource teachers engaged in the following activities in their general education classrooms:

	Project	Comparison
a. collaborative problem solving;	66.66%	47.72%
b. team teaching;	38.8%	6.25%
c. structured student observations;	56.6%	39.58%
d. frequent monitoring of student progress;	79.62%	71.42%
e. adaptation of materials for students;	72.22%	70.21%
f. formal assessment of learning problems;	87.03%	81.25%
g. work with nonhandicapped students;	68.52%	31.91%
h. provide consultation related to nonhandicapped students:	77.77%	54.16%
i. work with handicapped students;	57.4%	37.77%
j. relieve you to conduct whole class instruction.	20.37%	10.63%

2. Regular classroom teachers reporting that resource teachers primarily work:
   a. with students in the resource room. *34.17% Project sites 84.74% Comparison sites*
   b. as a consultant to teachers. *6.32% Project sites 6.89% Comparison sites*
   c. directly with handicapped students in regular classroom and with students in the resource room. *8.86% Project sites 0% Comparison sites*
   d. directly with students in the regular classroom, provides consultation, and work with students in the resource room. *18.98% Project sites 5.17% Comparison sites*
   e. directly with students in the regular classroom, team teaches, provides consultation, and works with students in the resource room. *29.11% Project sites 1.72% Comparison sites*
   f. other *2.53% Project sites 1.72% Comparison sites*

3. Regular education teachers believing that resource teachers should move to a collaborative model and provide less direct instruction. *42.85% Project sites 34.04% Comparison sites*
4. Regular classroom teachers indicating that special educators should spend more time working with students in regular classrooms who are not identified as handicapped. *54.55% Project sites 40.42% Comparison sites*
5. Regular classroom teachers indicating that they worked collaboratively with the resource teacher during the past school year. *67.24% Project sites 53.57% Comparison sites*
6. Regular classroom teachers indicated their belief in the following statements:
   a. Students with learning and behavior problems show more growth when maintained in the regular classroom. *7.7% Project sites 15.87% Comparison sites*
   b. Students with learning and behavior problems show more growth when served in the resource room. *7.7 Project sites 22.22% Comparison sites*
   c. Students with learning and behavior problems show more growth when they receive accommodations in the regular classroom and are served in the resource room. *69.2% Project sites 46.03% Comparison sties*
   d. Students with learning and behavior problems should be removed from the regular classroom because they encumber the instruction of other students. *15.4% Project sites 15.87% Comparison sites*

During May 1991, principals at participating project schools responded to a survey as to the role of resource teachers in their buildings and other aspects of the Neighborhood Schools Project. The first portion of the survey replicated the questions asked of regular education teachers. The second portion of the survey consisted of a number of statements where principals responded with their level of agreement on a five point Likert scale. In addition, principals were given a number of free response questions. The results of the principals' survey are reported on table 2. Answers to the free response questions are listed in Appendix C.

Table 2
Results of Elementary Principal Survey

1. Principals of project schools reporting that resource teachers engage in the following activities in regular classrooms in their schools:	
a. collaborative problem solving	100%
b. team teaching;	64%
c. structured student observations	86%
d. frequent monitoring of student progress;	79%
e. adaptation of materials for students;	100%
f. formal assessment of learning problems;	100%
g. work with nonhandicapped students;	86%
h. provide consultation related to nonhandicapped students;	86%
i. work with handicapped students;	93%
j. relieving regular teachers to conduct whole class instruction.	33%
2. Principals selected statements describing the format in which the resource teacher primarily worked in their building:	
a. with students in the resource room.	21%
b. as a consultant to teachers.	0%
c. directly with handicapped students in regular classroom and resource room.	7%
d. directly with students in the regular classroom, provides consultation, and works with students in the resource room.	35.75%
e. directly with students in the regular classroom, team teaches, provides consultation, and works with students in the resource room.	35.75%

Principals gave the following mean response to a Likert scale rating format:

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly Disagree 5
3. Special educators should move toward a collaborative model and provide less direct instruction.		2.07			
4. Special educators should spend more time working with students in regular classrooms who are not identified as handicapped.		2.29			
5. Students with learning and behavior problems show more growth when maintained in the regular classroom.		2.64			
6. Students with learning and behavior problems show more growth when served in the resource room.			3.15		
7. Students with learning and behavior problems should be removed from the regular classroom because they encumber the instruction of other students.			3.31		
8. Building Intervention Cadres (BICs) are useful for solving mild and moderate behavior problems.	1.14				
9. BICs are useful for solving mild and moderate learning problems.		2.31			
10. BIC members should receive extra pay for serving.	1.78				
11. The opportunity to place students in special education without a disability label is a positive step.		2.00			
12. Problem solving/functional assessments are a viable alternative to traditional methods for determining special education eligibility.		2.33			
13. The implementation of the Neighborhood Schools Project has resulted in more flexible use of support staff.	1.85				
14. Support staff are more involved in problem solving and interventions than	1.86				

previously.

15. The Flexible use of special education personnel contributes to greater effectiveness of the entire school.	1.53
16. The school program would be enhanced if more flexible use of Des Moines Plan teachers were permitted.	1.50

From the magnitude of the response from both teachers and principals, the collaborative aspect of the Neighborhood Schools Project appears to be extensively implemented, but not at all project schools. When compared to control schools offering traditional services, the strongest aspects of the implementation include collaborative problem solving, team teaching, work with non-handicapped students, provision of consultation related to nonhandicapped students, and work with handicapped students in the regular classroom. Little differences were noted in areas of frequent monitoring of student progress, adaptation of materials, and formal assessment.

Resource teachers working primarily in the resource room was reported by 34.17% of the teachers and 21% of the principals at project sites. Principals report that none of the resource teachers work exclusively as consultants and teachers reported that only 6.32% of resource teachers work primarily as consultants in their classrooms. Principals and teachers both report that the dominant form of service includes a mix of consultation, work with handicapped students in the regular classroom and provision of services in the resource room. In addition, a large number of resource teachers engage in team teaching. In general, it appears

that principals believe that resource teachers should move toward a consultative/collaborative service delivery model. In addition, teachers in project schools are more positive about receiving consultative services than those at comparison site schools.

Principals are appreciative of the flexibility allowed for resource teachers under the Neighborhood Schools model. They also believe that there should be more flexibility with Des Moines Plan teachers services. Other responses to the principal's survey indicate the level of acceptance of prereferral interventions.

Subordinate Question 2#a. Do schools engage in prereferral interventions and are they deemed useful?

Schools engaged in three levels of prereferral intervention at project schools. The first level consisted of collaborative problem solving for non-handicapped students between resource and regular class teachers. Both teachers and principals reported high levels of activity in this area. Building Intervention Cadres (BID provided the second form of intervention, and school support teams provided the third level. Principals indicated that BICs are very effective in assisting with behavior problems and somewhat successful with correcting learning problems. Not all schools reported the activity of their BIC and support teams. Data are listed on table 3.

Table 3
BIC and Support Team Activity
1990-1991

	Project schools	Comparison Schools
Number reporting	6	4
	mean	mean
BIC Referrals	24.83	5.75 (3/4 of reporting have BICs)
BIC Interventions	22.33	5.75
Referrals to Support Team	15.17	23.0
Support Interventions	6.83	8.35 (66% at one school)
Special Education Evaluations	11.0	20.0
Special Education Placements:		
Resource	6.83	9.25
SCI	0.33	2.5
Self-Contained	1.83	1.25

From the results of the data collected on BIC and Support Team activity, it appears that the project schools make more desirable use of BIC teams and BIC prereferral interventions. In addition, they make fewer referrals to support teams, conduct fewer special education evaluations, and place fewer students in special education programs. During the 1991-1992 school year, only three of the twenty school involved reported the data requested on interventions, evaluations and placements.

Subordinate question #3a: Are professionals including principals, teachers, and related service staff willing and able to implement problem solving assessment strategies?

Support team interventions in the form of problem solving assessments received some moderate support on the principal survey, but it was also criticized for being excessively time consuming and cumbersome. During the 1990-1991 school year, child study teams identified only twenty new special education

students using the pilot procedures based upon a problem solving model. That number declined during the 1991-1992 school year. At the project sites, support teams continued to rely on traditional assessment procedures for identification.

The data collected at the six selected schools revealed that problem solving/functional assessment approach required more staff time than the traditional approach. The average student referral process in the project schools consumed twenty hours of staff time as compared to fifteen in the comparison site schools. After reviewing assessment data and IEPs from the six schools, the panel of experts indicated the following:

1. Functional assessment procedures were preferred but child study teams should have the option of using traditional procedures.
2. The data gathered from functional assessment related more directly to IEPs, interventions, and resource program instruction.
3. The files reviewed lacked adequate documentation for services provided.
4. Functional assessment which uses a question directed process can be more helpful if used in combination with traditional approaches.
5. Functional assessment procedures were useful in determining outcome criteria for performance objectives.

Subordinate question #4a: Given classroom training based upon the Curriculum Based Measurement system, will

resource teachers implement frequent performance monitoring?

A survey was adminisitered to all teachers who participated in CBM training before the beginning of the 1990-1991 school year and again in 1992. At the time of that surveys, teachers indicated that CBM data was used only occasionally for purposes of determining student identification. Further, trained teachers were not yet using these techniques with all their students. CBM support groups were created and met periodically during the year to bolster use of frequent performance monitoring procedures.

5a. Are parents accepting of the idea that students with special needs can be provided services under a new service model?

This portion of the evaluation was conducted by Lesley Martin as part of her creative component in a masters program at Iowa State University. Parents responded to a ten item questionnaire using a five point Likert scale. A condensed form of survey results for parents of intermediate level students are presented on table 4. Mrs. Martin's research and analysis are more comprehensive than the small portion presented on the table.

Table 4
Parent survey

Questions	Project grp		Comparison grp	
	% Agree	% Disagree	% Agree	% Disagree
1. My child would do better in class if he/she didn't have to miss so much while in the resource room.	20	68	34	67
2. To do better in school my child needs the individual help provided in the resource room setting.	92	0	91	4
3. The individual help provided in the resource room is not necessary for my child to be successful in his/her classroom.	8	88	0	92
4. I would prefer that the resource teacher provide individual help for my child in his/her regular classroom.	28	56	34	55
5. My child does not need small group instruction in the resource room to do well in his/her classroom work.	12	84	8	91
6. To do better in school my child needs the support provided by the resource teacher in the resource room setting.	88	8	91	8
7. My child could do just as well in school without going to the resource room teacher for help.	8	84	0	92
8. Although my child is missing regular classroom activities, the support given in the resource is important.	84	8	96	4
9. My child needs small group instruction in the resource room to better understand concepts and skills.	96	0	100	0
10. If my child could receive small group instruction in the regular classroom, he/she would not need resource help.	32	48	54	41

Inspection of the data reveals little difference between project and comparison site parents. It is clear that parents perceive the traditional pull-out model as preferable.

Central Question B: Will students benefit more under the new service model than from the traditional service model?

As indicated earlier, the answers to the central question will be provided in the findings to the subordinate questions. Null hypotheses were posed for all results.

Subordinate question #1b: Will student academic achievement in reading and math be better under the new service delivery system?

Elementary students in the resource program from the original randomly selected project and comparison schools were administered pre-tests in September 1990 and post-tests in May 1991 in the form of CBM reading and math probes. Reading probes were readministered on the same schedule during the 1991-1992 year. Analysis of covariance was selected as the method to compare experimental and control groups. This method statistically adjusts for different beginning levels of the groups to obtain a more accurate interpretation of how the treatments effect student progress. Tables 4 through 6 reflect the results depicting means adjusted means, F scores and levels of probability. The .05 level of

probability was deemed significant. Anything higher is deemed non-significant.

The data on reading achievement based upon the median number of words read per minute of a three probe sample produced mixed results. Insufficient numbers of first and second grade students were included in the testing to warrant comparison by statistical means by grade level. Table 5 depicts the reading achievement comparison for the entire sample in the 1990-1991, and table 6 shows comparison data for reading for the 1991-1992 school year. Tables 7 through 13 depict the results separately for grades three through five.

Table 5
Total Sample, 1990-1991
Median Reading Passage Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	60	38.617	58.350	57.600
Comparison grp	65	37.292	59.800	60.492
df = 123	F = 1.017		P = .316	Not significant

The results of the ANCOVA for the total sample on reading passage in the 1990-1991 school year yielded an *F* score of 1.017 which is not statistically significant.

Table 6
Total Sample, 1991-1992
Median Reading Passage Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	56	41.456	63.912	63.947
Comparison grp	65	41.523	58.723	58.693
df = 120	F =3.873		P = .049	Significant at .05 level

The results of the ANCOVA comparison of groups for 1991-1992 yielded an F score of 3.873 which is significant at the .05 level.

Table 7
3rd Grade, 1990-1991
Median Reading Passage Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	14	28.571	42.357	39.783
Comparison grp	21	25.150	49.600	51.402
df = 32	F = 5.336		P = .026	Significant at .05 level

The ANCOVA comparison yielded an *F* score of 5.336. Based upon the small sample participating in the assessment, third grade students in the comparison schools scored significantly better than students in the project schools. Table 8 depicts the result of the

comparison of third grade students during the 1991-1992 school year.

Table 8
3rd Grade, 1991-1992
Median Reading Passage Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	15	26.733	51.867	50.771
Comparison grp	21	25.286	45.143	45.925
df = 34	F = 2.011		P = .162	Not significant

For the 1991-1992 school year, the comparison of third grade reading scores yielded an F score of 2.011. Although the project school group presented a trend of out-performing the comparison group, the results were not significant.

Due to the small sample sizes, the third grade scores from 1990-1991 and 1991-1992 were aggregated and compared. The comparison results are depicted on table 9.

Table 9
3rd Grade, 1990-1991 and 1991-1992 Aggregated
Median Reading Passage Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	29	27.621	47.276	45.483
Comparison grp	41	25.220	47.317	48.585
df = 68	F = .989		P = 1.000	Not significant

The aggregated data indicates that there are no significant differences for third grade students on probes for rate of oral reading. The null hypothesis is retained for third grade students.

Tables 10 through 13 present comparisons of reading passage probes administered during the 1990-1991 and 1991-1992 school years for grades 4 and 5.

Table 10
Grade 4
Median Reading Passage, 1990-1991
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	20	41.700	67.200	74.508
Comparison grp	16	57.375	84.313	75.177
df = 34	F = .010		P = 1.0	Not Significant

Table 11
Grade 4
Median Reading Passage, 1991-1992
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	20	42.526	65.000	65.703
Comparison grp	16	43.714	71.381	70.745
df = 38	F = 1.504		P = .226	Not Significant

Table 12
Grade 5, 1990-1991
Median Reading Passage
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	17	54.176	70.059	71.170
Comparison grp	16	56.063	73.063	71.882
df = 34	F = .022		P = 1.0	Not Significant

Table 13
Grade 5, 1991-1992
Median Reading Passage
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	116	66.313	87.438	87.779
Comparison grp	14	67.214	89.071	88.681
df = 28	F = .024		P = 1.0	Not Significant

The null hypotheses for reading rate gains for fourth and fifth grade students are maintained. There were no significant differences using an analysis of covariance during either the 1990-1991 or 1991-1992 school years.

Results for reading words per minute on the Harris-Jacobs Word List are depicted on table 14.

Table 14
Harris-Jacobs Word List Words Per Minute
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	51	20.167	45.303	43.294
Comparison grp	47	17.476	30.254	32.359
df = 127	F = .534		P = 1.0	Not Significant

The null hypothesis is maintained for the one minute reading sample using the Harris-Jacobs Word List. There were no significant differences using an analysis of covariance.

Results of the comparison of math achievement are presented on table 15.

Table 15
Math Digits Correct Per 2 Minute Probe
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	66	21.076	29.030	27.777
Comparison grp	51	17.962	28.135	29.725
df = 116	F = .899		P = 1.0	Not Significant

The null hypothesis is maintained for the two minute math probe. There were no significant differences using an analysis of covariance.

In summary, during the 1991-1992 school year, there were essentially no differences between project and comparison groups in academic achievement except for reading passage rate by third grade

students. Repeated data collection during 1991-1992 in the area of reading resulted in a finding of no significant difference at each grade level, however; aggregated data for grades 1-5 indicated a mildly significant advantage for students in the project schools.

Subordinate question #2b. Will students in the new system demonstrate stronger self-concepts and attitudes toward school than students served under the traditional model?

Pre-tests and post-tests using the Attitude Toward School scale and Self-Concept as a Learner scale were administered to students receiving resource teacher services. Results of the comparison are depicted on tables 16 and 17.

Table 16
Attitude Toward School
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	61	18.000	19.541	19.505
Comparison grp	57	17.789	17.070	17.109
df = 116	F = 5.427		P = .021	Significant at .05 level

The null hypothesis is rejected for attitude toward school. Significant differences at the .05 level were found for students on the measure of attitude toward school. The project group improved their

attitude toward school during the intervention period while school attitude declined slightly among students in the control group.

Table 17
Self Concept as a Learner
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	73	17.452	19.699	19.251
Comparison grp	57	15.606	16.091	16.585
df = 137	F = 7.129		P < .01	Significant at .01 level

The null hypothesis is rejected for the measure of self concept. Significant differences at the .01 level were found for students on the measure of self concept . Self concept improved for the project group at a greater rate than the comparison during the intervention period.

3b. Will students served under the new service delivery system demonstrate better social skills than students served under the traditional model?

During the 1990-1991 school year, resource teachers rated special education on their social skills and problem behavior. Resource teachers providing exclusively pull-out services rated students as better performing on the problem behavior scale than the project teachers who worked in the context of the regular classroom. In addition, reliability comparisons between regular class and resource

teachers rating the same students yielded a dismal 55% level of agreement.

During the 1991-1992 school year, regular classroom teachers rated student performance on the Social Skills Rating System (Gresham and Frank, 1990). Pre and post ratings were accomplished in September 1991 and May 1992. Results from the ratings of social skills are depicted on table 18. Problem behavior comparisons are depicted on table 19. Good social skills are represented by higher scores and good behavior is represented on the problem behavior scale as low scores.

Table 18
Social Skills
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	43	30.698	32.023	33.303
Comparison grp	27	34.321	38.107	36.141
df = 69	F = 1.772		P = .185	Not Significant

Table 19
Problem Behavior
Analysis of Covariance

	n	Mean of Covariate	Mean of Criterion Variable	Adj. Mean of Criterion Variable
Project group	46	15.818	14.977	14.098
Comparison grp	28	13.179	12.679	14.060
df = 70	F = 1E-03000		P = 1.0	Not Significant

The null hypothesis is retained for both social skills and problem behavior. Neither comparison yielded significant differences at the .05 level.

Discussion

During this second and third years, a number of encumbering events and circumstances occurred. A large part of the sample was lost during the pre-test period and student outcome data from a portion of the research could not be used in the data analysis. The losses came about through naturally occurring events that encumber all field based research. For instance, teacher transfers, resignations, and maternity leaves forced some data to be dropped from the study because either the pre-test or post-test was not accomplished. There were also cases where teachers neglected or ignored the request to collect and report data. In addition, student mobility contributed to an approximate 15 percent loss of population each year.

Project Implementation

The information collected during the implementation of the Neighborhood Schools Project had good formative value and contributed to corrections in the service delivery design.

Judging from the responses of teachers and principals, the collaborative model appears to be well received and is one of the more successful aspects of the project. Resource teachers report problems implementing the collaborative model in that they feel

excessive demands are made upon them to serve student in regular classrooms and in resource rooms. Since none of the schools have adopted a purely consultative model despite provision of training in this style of service, it appears that schools chose a flexible approach of service delivery model that gives them the discretion of offering either consultative, pull-out, or both to special nee. ' students. According to the survey data there are few individuals who believe that exclusive use of pull-out is the most effective approach to delivering services to resource students. The fact that the mixed model of collaboration and direct service was effectively implemented by randomly selected schools contributes to the conclusion that the model itself has merit and can be implemented without the participation of exceptionally committed staff. In fact, success was achieved by some who were reluctant participants during the early stages of implementation.

Building Intervention Cadres (BICs) proved to be another well accepted component of the project. Principals indicated that the BICs effectively solved many behavior problems and they were somewhat successful in dealing with learning problems. The activities of BICs and other prereferral interventions carried out by collaborative teacher dyads and dyads composed of teachers and support staff also contribute to a lower identification rate at project schools. The Building Intervention Cadres appeared to be sufficiently successful that teams at all elementary schools in Des Moines should be trained. There are differing levels of use and success, but some of the schools which adopted BICs solely as a result of being randomly selected

achieved great success and some who volunteered are having only marginal success.

Despite the success of collaborative teaching and the BICs, not all aspects of the Neighborhood School Project have been smoothly or effectively adopted. The use of problem solving assessment procedures to determine eligibility for special education services was not widely implemented. Schools report that the procedures as represented in the document "Pilot Procedures for Determining Special Education Eligibility" were time consuming and cumbersome. Their perception of excessive time use was supported by the comparison of time spent on problem solving assessments verses traditional assessments. Time use data indicates that problem solving assessments consume 33% more staff time than traditional assessments. Despite the problems implementation, principals indicated that they believe that the procedures may hold some promise if modified. The panel assembled to evaluate and compare the problem solving/functional assessment procedures with traditional procedures concluded that the problem solving approach provided evaluation information more relevant to the IEP development and it was more useful for establishing outcome criteria. At this juncture, streamlining the functional assessment procedures and improving the training of building support teams appears warranted. However, in this time of declining resources, careful consideration will have to be given to the cost effectiveness of problem solving/functional assessment practices. At present, it is clearly more costly to conduct the problem solving assessments than traditional assessments.

Exemplary frequent performance monitoring occurred at some schools, but the general impression created by the survey data is that use of CBM procedures was implemented slowly. Implementation of frequent performance monitoring which has solid research validation of its effectiveness should be given greater effort and time for implementation. Resource teachers can not be expected to adopt these procedures immediately without continuous support and feedback.

The results of Lesley Martin's survey provide clear evidence that parents are more comfortable with the traditional pull-out model than with in-class service delivery approaches. This may be that when their children were placed in resource services educators provided convincing descriptions of the opportunities and advantages of traditional resource programs. It is also likely that parents are not aware of alternative approaches for addressing the needs of their children.

Student Outcomes

The data collected on student outcomes generally supports the implementation of the Neighborhood Schools Project. No great differences were found in academic achievement between the pull-out only service model and the mixed collaborative/direct service model. These results tend to be similar to other comparisons between consultative and pull-out models. Since there appear to be no academic advantages to providing either the pull-out or mixed services, school faculties should have the flexibility to match service delivery strategies to the specific needs of students.

There is also a clear advantage in favor of the mixed model with regard to self-concept and attitude toward school. Longitudinally, it may be that, students with better self-concepts and more positive attitudes toward school are likely to remain in school longer and have more long-term school success. Continued research on this matter is warranted. Some caution should be exercised in the matter of implementing purely a collaborative model with little or no pull-out services and eliminating pull-out as an option. Despite the generally better attitudes and self-concept growth among students at the experimental schools, there were significant changes by individual students in both groups. Many of the students in the control school demonstrated marvelous improvement in their school attitude and self-concept despite the fact that pull-out only students have generally lower self-concepts and poorer attitudes toward school. In contrast, several students in the mixed model demonstrated huge drops in their self-esteem and attitude toward school despite the general improvement in self-concept at the project schools. In conclusion, while it is generally better for student self-concept for services to be provided under the mixed model, it is not the case for all students. It appears that pull-out is still a viable option for some students and that integrated collaborative service is a better option for more students than currently provided at comparison site schools.

The social skills and problem behaviors of students with mild handicaps do not appear to be strongly effected by either pull-out or in-class service models. However, there may be a longitudinal effect.

Recommendations:

The results of the Neighborhood Schools Service Delivery Project evaluation lead a number of recommendations for changes in State Department of Education rules and practices within the Des Moines Independent Community School District.

Recommended rule changes:

1. Rule 41.5(4) *Resource teaching program.* The provision that "pupils enrolled . . . require special education for a minimal average of 30 minutes per day" should be dropped. This provision implies that direct services must be provided by a resource teacher. The project results indicate that equal results can be obtained through indirect service models, such as, consultation and co-teaching.
2. Rule 41.5(5) *Itinerant services (school based).* This rule is sufficient, but funding for itinerant services should be generated from the instructional rather than support service dollars. Common practice in the state is that this type of service is provided to students with sensory impairments. When considering the effectiveness of indirect services, itinerant teachers may an appropriate service option for a wide range of students with mild learning and behavior problems.
3. Rule 41.6(5) *Maximum class size.* An additional column should be added to the table of class size maximums. The additional column should authorize services of an itinerant consultative teacher. Recommended class size would be the same as that of a resource teacher.

4. Rule 281-41.24(257,281) *Certification.* Current practice appears to presume that special education is only something that is provided by a certified special educator or a licensed support service provider. Certification requirements should be reconsidered. The results of the project indicate that, through problem solving approaches, services executed through a wide range of providers are as effective as services from special educators. It would be reasonable to operate from the premise that special education is a service represented in an Individualized Educational Plan (IEP) designed to meet student needs and not limited to who the providers may be. The multi-disciplinary team which designs the IEP could determine what professionals or other individuals can best address individual needs. For example, instruction from a remedial reading specialist for a student who meets state eligibility criteria in the learning disabilities category would be preferable to instruction provided by a temporarily certified LD teacher. Under current practice and enforcement of certification rules, certification (even temporary) takes precedence over competence.
5. Rule 41.25(3)c. *Educational strategist.* The results of this project indicate the viability of the educational strategist model which is designed to "provide assistance to regular classroom teachers in developing intervention strategies for pupils who are mildly handicapped in obtaining an education but can be accommodated in the regular

classroom environment." Remove this position from the list of support services and incorporate its description into an authorization for itinerant consulting teachers funded with special education instructional monies rather than support service funds.

6. Rule 281-41.3(281) *Definitions.* Add Non-categorical Special Needs to the listing of definitions. A non-categorical special needs student is one who meets the eligibility criteria established for traditional disability categories (MD, LD, BD, etc.) or who is severely discrepant in obtaining an education as indicated by the repeated failure of systematic interventions designed to improve students learning and behavioral performance.
7. Rule 41.4(1) *Least restrictive alternative.* The current provision states "Handicapped pupils shall be maintained in general education classes with special education support services when appropriate." Change this provision to read "Pupils with handicaps shall be maintained in general education classes with special education support and instructional services when appropriate." The existing rule implies that support services are only those which are funded and listed under the authorized personnel (41.25(3)) section of the rules. The project results indicate that many students can be maintained in general education classrooms with the assistance of special education instructional staff.
8. *Weighted funding.* Although weighted funding procedures have served Iowa schools well for the past 18 years, it now

is appropriate to reconsider how funds are allocated for services to students with mild handicaps. Schools which are successful in reducing the number of placements in resource programs stand to lose funding as a result of their success. All the resources currently used in the traditional model are necessary to support the prevention and early intervention efforts demonstrated in the NSP project. Funding formulas based upon average daily membership, poverty rates, and mobility rates may more appropriate than one based upon the number of students identified. A funding system based upon the general characteristics of the student population would offer schools more stability and enhance their ability to engage in prevention and early intervention.

Recommended Changes in Practice for the Des Moines Public Schools:

1. Either Building Intervention Cadres (BICs) or other collaborative problem solving approaches should be implemented and maintained in all Des Moines Schools. BIC teams were instrumental in solving problems, reducing special education referral rates, and reducing placements into resource programs.
2. Abandon the practice of providing only pull-out resource services to students with mild handicaps. In addition, training should be provided to all staff on collaborative teaching approaches including consultation, co-teaching, and problem solving.

3. Provide ongoing and on-site training to support teams for the purpose of improving and streamlining problem solving/functional assessment practices.
4. Provide ongoing and on-site training to resource teachers in the area of frequent performance monitoring. This recommendation assumes that all special education consultants will be expected to develop expertise on frequent performance monitoring techniques.
5. The District should undertake an extensive communication effort to share the results of this and similar studies with school staff. Very often, services are delivered in a way that a local faculty expects them to be delivered rather than on validated practices. Too often, traditional processes are what is expected and the resource and support staff tend to conform to on-site expectations.
6. A concerted effort should be undertaken to inform parents of the opportunities and outcomes of services provided through consultation, collaboration, problem solving, and co-teaching. Again, the notion that what is expected is what will be delivered in spite of research information to the contrary.
7. An evaluation similar to this one for the NSP should be conducted on pull-out programs for at-risk students served in Des Moines Plan classes. The fact that there is little advantage for exclusive use of pull-out services for students with disabilities raises an equally important issue with regard to students served in Des Moines Plan classes.

Cautions

The Neighborhood Schools Service Delivery Project was designed as a potentially more desirable and effective alternative to traditional practices. Although there may be a cost benefit some day, the project was not designed for that purpose. Schools should not look upon the alternative system as a way of saving resources. For example, at two of the secondary schools, there was a tendency to load extra students and large numbers of needy students into classrooms where regular and special education teachers were co-teaching. These actions are contrary to the purpose of co-teaching which is to supplant the need for pulling students out of regular content classes. Class sizes approaching forty will undermine the potential for meeting the needs of disabled learners in the context of general education.

Conclusions

The Neighborhood Schools Service Delivery Project yielded mixed results, however; its general impact on students and service delivery options is positive. The school district should adopt a more flexible approach to delivering services to students with mild disabilities, and services are best provided in the context of general education classrooms for most of these students. Prevention and early intervention activities should be undertaken at all schools.

The problem solving emphasis of the project and the successful inclusion of mildly handicapped students in general education settings holds some promise for increased integration of students with disabilities into regular classes and in their neighborhood

schools. The district should explore options for maintaining most handicapped students in their neighborhood schools.

Appendix A

Survey on Delivery of Resource Services
Regular Teacher form

Neighborhood Schools Service Delivery Project

Survey on Delivery of Resource Services

Regular Teacher Form

Check appropriate responses:

1. Does the resource teacher in your building engage in the following activities in your class:
   a. collaborative problem solving; ___ Yes ___ No
   b. team teaching; ___ Yes ___ No
   c. structured student observations; ___ Yes ___ No
   d. frequent monitoring of student progress; ___ Yes ___ No
   e. adaptation of materials for students; ___ Yes ___ No
   f. formal assessment of learning problems; ___ Yes ___ No
   g. work with nonhandicapped students; ___ Yes ___ No
   h. provide consultation related to nonhandicapped students: ___ Yes ___ No
   i. work with handicapped students; ___ Yes ___ No
   j. relieve you to conduct whole class instruction. ___ Yes ___ No

2. Which of the following statements describes the format in which the resource teacher in your building works (select one):
   ___ a. He/she works primarily with students in the resource room.
   ___ b. He/she works primarily as a consultant to teachers.
   ___ c. He/she directly with handicapped students in regular classroom and works with students in the resource room.
   ___ d. He/she works directly with students in the regular classroom, provides consultation, and works with students in the resource room.
   ___ e. He/she works directly with students in the regular classroom, team teaches, provides consultation, and works with students in the resource room.
   ___ f. Other, Please describe: _____

3. Do you believe special educators should move toward a collaborative model and provide less direct instruction? ___ Yes ___ No

4. Should special educators spend more time working with students in regular classrooms who are not identified as handicapped? ___ Yes ___ No

5. Have you worked collaboratively with the resource teacher during the past school year?
   ___ Yes ___ No

   5a. If yes, generally when do you meet with the resource teacher? ___ Before school; ___ After school; ___ During preparation time; ___ Released time; ___ Other.
   5b. Is the time sufficient? ___ Yes ___ No

6. From your perspective, which of the following statements generally represents your personal belief (select one):
   ___ a. Students with learning and behavior problems show more growth when maintained in the regular classroom.
   ___ b. Students with learning and behavior problems show more growth when served in the resource room.
   ___ c. Students with learning and behavior problems show more growth when they receive accommodations in the regular classroom and are served in the resource room.
   ___ d. Students with learning and behavior problems should be removed from the regular classroom because they encumber the instruction of other students.

Appendix B

Survey on Delivery of Resource Services
Principal form
and free response results

NEIGHBORHOOD SCHOOLS SERVICE DELIVERY PROJECT

Principal Survey

Check appropriate responses:

1. Does the resource teacher in your building engage in the following activities in your class:
   a. collaborative problem solving; ___Yes ___No
   b. team teaching; ___Yes ___No
   c. structured student observations ___Yes ___No
   d. frequent monitoring of student progress; ___Yes ___No
   e. adaptation of materials for students; ___Yes ___No
   f. formal assessment of learning problems; ___Yes ___No
   g. work with nonhandicapped students; ___Yes ___No
   h. provide consultation related to nonhandicapped students; ___Yes ___No
   i. work with handicapped students; ___Yes ___No
   j. relieve you to conduct whole class instruction. ___Yes ___No

2. Which of the following statements describes the format in which the resource teacher in your building works (select one):
   ___ a. He/she works primarily with students in the resource room.
   ___ b. He/she works primarily as a consultant to teachers.
   ___ c. He/she works directly with handicapped students in regular classroom and works with students in the resource room.
   ___ d. He/she works directly with students in the regular classroom, provides consultation, and works with students in the resource room.
   ___ e. He/she works directly with students in the regular classroom, team teaches, provides consultation, and works with students in the resource room.
   ___ f. Other, Please Describe: _____

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3. Special educators should move toward a collaborative model and provide less direct instruction.	1	2	3	4	5
4. Special educators should spend more time working with students in regular classrooms who are not identified as handicapped.	1	2	3	4	5
5. Students with learning and behavior problems show more growth when maintained in the reguiar classroom.	1	2	3	4	5
6. Students with learning and behavior problems show more growth when served in the resource room.	1	2	3	4	5
7. Students with learning and behavior problems should be removed from the regular classroom because they encumber the instruction of other students.	1	2	3	4	5
8. Building Intervention Cadres (BICs) are useful for solving mild and moderate behavior problems.	1	2	3	4	5
9. BICs are useful for solving mild and moderate learning problems.	1	2	3	4	5
10. BIC members should receive extra pay for serving.	1	2	3	4	5

11. The opportunity to place students in special education without a disability is a positive step.	1	2	3	4	5
12. Problem solving/functional assessments are a viable alternative to traditional methods for determining special education eligibility.	1	2	3	4	5
13. The implementation of the Neighborhood Schools Project has resulted in more flexible use of support staff. 1	2	3	4	5	
14. Support staff are more involved in problem solving and interventions than previously.	1	2	3	4	5
15. The flexible use of special education personnel contributes to greater effectiveness of the entire school	1	2	3	4	5
16. The school program would be enhanced if more flexible use of Des Moines Plan teachers were permitted.	1	2	3	4	5

Part II. Free Response Questions

1. What are the major advantages of the Building Intervention Cadre's? _____

2. What are the major problems associated with BICs? _____

3. What are the major advantages and disadvantages of the problem solving/functional assessment procedures? _____

4. Which categories of students would be most difficult to program for if these students were educated in their neighborhood schools? _____

5. If all but the moderate and severely handicapped students were returned to your building, what kinds of support would be needed from special educators? _____

6. Do you believe that categorical distinctions (e.g. MD, LD, BD) are useful? _____

Free Response Questions from Principal's Survey

1. What are the major advantages of the Building Intervention Cadre's?

Responses:
- Collaboration to brainstorm ideas and discuss. Intervention contract benefits are positive involvement with student, parents, and Teachers. They workl
- To problem solve, provide alternatives for academic and behavior problems, and decreased special education placement.
- Group problems solving; relief for principal in area of discipline; attention with focus and specific plan.
- Teachers assist teachers; it is a step before child study team; many children can benefit.
- Sharing of problem solving.
- Peers speaking to peers.
- Intervention step
- Great for documenting for child study team; shared responsibility for all students.
- Making a sincere effort to solve problems.
- Peer suppports, trust, success.

2. What are the major problems associated with BICs?

Responses:
- Working late after hours often to 5:00 p.m.
- Amount of time spent in meetings, observing, making behavior management plans.
- None
- Access to the BIC team
- Extra time needed. Finding teachers willing to serve without compensation or released time.
- Time consuming, trust, $ for incentives for teachers and students.
- Getting the time for all to meet.
- Behaviors modified only during implementation of plans. No long lasting effects; confusion in area of BD referrals- need to go thru BIC etc.
- Time
- Very time consuming
- Lack of time to meet; time for follow-up and observations.
- Time consuming--nees extra pay. Some teachers don't want any thing to do with it and won't give it a try.
- Time, need academic traing focus for BIC.

3. What are the major advantages and disadvantages of the problem solving/functional assessment procedures?

Responses:
- Advantages: measurable, observable, and exact data. Disadvantages: time consuming; training required to learn techniques.
- Staff members have more ownership in solving problems, creative solutions, team effort, students benefit.
- Advantage: empowers input from staff.

- Advantages: 1) assessment related to curriculum objectives; 2) more latitude for decision making: 3) more teacher input. Disadvantages: 1) paper chase; 2) consultants reluctant to accept data--they sill hold the control after building teams have worked and worked and then we hear "but we need more."
- Gives more variety in responses.
- Too long--overkill with BIC doing most of it already. (I can see its benefits in Non-BIC building.)
- Teachers thinking the BIC will solve their problem without them having to follow through with interventions.
- Speeder
- Flexibility and input from all.
- Advantage: thorough. Disadvantage: it is lengthy. Still difficult to assess child's needs.
- Unclear procedures--game rules seem to change.

4. Which categories of students would be most difficult to program for if these student were educated in their neighborhood schools?

Responses:
- Behavior disordered--disruptive.
- The students- boarderline on ability level. Too high for
- Severe and profound with physical handicaps.
- Severe behavior problem, and physically handicapped.
- Moderate, profound, and severely handicapped BD, MD, and PD.
- BD (without associates)
- Severe MD, LD
- Children whose handicaps or disabilities are severe enough to warrant self-contained placement.
- Behavior disorder
- Severe BD; physically disabled due to stairs.
- Severe and profound.
- Physical handicaps.

5. If all but the moderate and severely handicapped students were returned to your building, what kinds of support would be needed from special educators?

Responses:
- Collaboration on methods, materials, team teaching, evaluation, etc.
- Flexible team spirit; additional resource positions.
- Administrative and full time nurse, social worker, and psychologist.
- More staff!!! Certified teachers; associates to accompany students to art, music, P.E.
- More team time in building.
- Full time support (at least 2 per building) and associate help.
- Physical facilities such as swimming pool, exercise room, space.
- The support staff funds should follow the students.
- I would need an elevator and more staff and more rooms.
- Strategies for WC, on task and academic improvement. Helping reg. teachers cope with these students. Lots of support.
- More building associates- counseling for BD children.

NEIGHBORHOOD SCHOOL PROJECT
PARTICIPATING SHCOOLS
1991-1992

Elementary Schools	Principal
Adams	Tom Turner
Brooks	Lorenzo Jasso
Douglas	Peggy Floden
Edmunds (Partial)	Sandra Bell
Findley	Bonnie Graeber
Granger	Jerry Mills
Hillis	Judi Cunningham
Howe	Steve Burgett
Hubbell	David Lingwall
King	Lawrence Streyffeler
Lucas	Sandra O'Brien
McKinley	Dominic Bonanno
Mitchell	Marlene Doby
Moore (Partial)	Udell Cason
Moulton	James Graeber
Oak Park (Partial)	Barbara Comito
Park Avenue	Gene Stephany
Perkins	Lawrence Streyffeler
Pleasant Hill	Melvin Kiner
Stowe	Keith Banwart
Windsor	John Johnson
Woodlawn	Don Shaw
Wright	Twyla Woods
Lovejoy	Dominic Bonanno
Wallace	Laurence Sargent

Middle and High Schools	
Callanan	Marian Ehlers
Hiatt	Gary Eyerly
McCombs	John Barrett
Roosevelt	Jerry Conley
Weeks	Wendell Miskimins
Brody	Connie Cook

Appendix D

Progress to date

Neighborhood Schools Project: Accomplishments to Date

August1992

School Participating:

-1989-1990: Ten elementary and two middle schools
-1990-1991: Nineteen elementary, five middle schools, and one high school
-1991-1992: Twenty-five elementary schools, five middle schools, and one high school

Inservice Provided:

Topic	Completing course
Curriculum Based Assessment	99
Collaborative Consultation	113
Building Intervention Cadre (BIC)	274
BIC Maintenance	50
Introduction to NSP and BIC	60+ (Hiatt, McCombs, Calannan)
Functional Assessment & Eligibility	81
Total receiving inservice	777 (1989-1992)

Development of district norms for Curriculum Based Measurement

-Tested 5000 student three times
-Developed norms and tables for reading, math, and written language fluency for grades 1-5

Resource Room Placements:

-Resource numbers in 10 elementary schools declined from 170 five year average to 150 at end of the school year. The 10 schools began the 90-91 school year with 121 students. During the 1990-1991 school year, project schools continued to identify students as disabled at approximately 70% of the rate for non-project schools.

Data Collected:

-K-1 students assessed for self-concept, reading and math
-Regular class teachers surveyed for their perception of changing role of resource teacher. Second year survey completed.
-Regular class and resource teachers surveyed in depth on collaboration.
-Elementary principals survey administered April-May 1991.
-Self-Concept as a Learner Scale administered pre and post during 90-91.
-Attitude Toward School Scale administered pre and post during 90-91.
-Reading and math probes administered pre and post during 90-91, reading probes readministered the 1991-1992 school year.
-Social Skills Rating Scale administered in May 1991, Sept. 1991, & May 1992
-Parents surveyed during Fall of 1991
-Time use data collected by child study teams at six schools

Visitations:

-Cooperative Teaching Project at Hiawatha School in Minneapolis visited by three principals, a resource teacher and the coordinator of the Des Moines Plan.
-Alternative Learning Environment Model (ALEM) visited in Philadelphia by two principals

Products Developed:

-Second year grant proposal for $101,000; third year proposal for $33,893.
-K-1 report
-Pilot Procedures Procedures for Determining Special Education Eligibility
-Thirty-one building plans wirtten
-1989-1991 Neghborhood Schools Project Report
-1990-1991 Neighborhood Schools Project Report
-Neighborhood Schools Project Summary Report
-Revision of "Pilot Procedures for Determining Special Education Eligibility"

Information Dissemination:

-Presentation given at Iowa CEC, November 14, 1991
-Presentation given at Des Moines Educators Conference, February 24, 1992
-Presentation given at CEC convention in Baltimore on elementary school model, April 1992.
-Presentation given CEC convention in Baltimore on middle school model, April 1992
-Presentation scheduled for CEC convention in San Antonio on student outcomes, April 1993.

Appendix E

K-1 Evaluation Report

Neighborhood Schools Service Delivery Project
Draft Report

Promoted vs. Non-promoted Kindergarten Students in the Des Moines Public Schools 1989-1990

Prepared by
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Abstract

During the 1989-1990 school year, K-1 eligible students from ten Des Moines elementary schools were promoted to first grade and provided services from itinerant teachers. Students with similar needs were not promoted and served special K-1 classrooms. Academic achievement and self-concept scores were compared for the two groups. No significant differences were found between the groups on measures of reading and self-concept. Significant differences were found in comparison of composite and math scores. These findings support other research that there is no benefit to providing the special K-1 classes to low performing first grade age students. In contrast, the promoted students performed better on achievement measures than non-promoted students.

Promoted vs. Non-Promoted Kindergarten Students in the Des Moines Public Schools 1989-1990

School districts throughout the nation offer a variety of extra year programs for kindergarten age students. These include straight kindergarten retention, developmental kindergartens before entry to kindergarten, and transitional kindergarten before first grade. The net effect of all these approaches is to delay or retain students early in their educational experiences. Teachers and parents tend to support these practices under the belief that they are preventing school failure caused by immaturity and that children will develop better self-concepts and learn more with an additional year to mature.

In some cases, educational and child development theories tend to support these practices. Straight grade retention appears to emanate from the Gesellian theory of development that holds that behavior is genetically determined, and that environmental intervention only marginally influences student growth. Should assessment of a child's physical, social, mental and chronological age indicate that he behaves more like a child a year younger, retention is recommended as an adjustment for this overplacement in grade level (Carstens, 1985). Many schools subscribe to this theory, labeling children as developmentally unready or immature, and thus believe that the only appropriate intervention is time.

Piaget's theory also is developmental and holds that children must acquire certain skills and knowledge to enter subsequent stages of learning. However, simple retention would not be indicated in this model. Retention would only be effective if spontaneous or guided cognitive growth occurs during the period of retention (Cartens, 1985). From this perspective, sequential development must be addressed to prepare students for successful school experiences. Programs developed from this perspective would include developmental kindergartens and transitional kindergartens.

History of Kindergarten Retention in Des Moines

Operating from a developmental perspective, many Des Moines elementary schools engaged in the practice of retaining kindergarten students during the early eighties. Both teachers and parents accepted the notion that these students lacked appropriate readiness for entry into first grade. Over time, sufficient concern over these

practices lead the district to examine alternatives to having children repeat a year under the same conditions in which they had failed the first time through kindergarten.

During the past four years, the Des Moines Public Schools sought to compensate for the disadvantages of grade retention at the kindergarten level by providing young at-risk students with a transitional kindergarten titled the K-1 Program. In lieu of repeating kindergarten in their home schools, students whose scored low on district adopted tests and received the recommendation of their teachers entered the K-1 Program. In this case, a somewhat Piagetian perspective appears to have been adopted in that special guidance would be provided without the fallacy of having children simply repeat previous unsuccessful experiences. When created, the K-1 program had several apparent advantages over simple kindergarten retention. Class sizes were kept at 18 or below; students attended full-day instead of half-day classes; the curriculum was enriched to make up for lack of experiences; and instructional strategies focused on providing highly motivating developmentally appropriate learning activities. Underlying assumptions of the K-1 program were that students would acquire language and behavioral prerequisites to first grade through the enriched curriculum, that self-concept would improve, and that academic readiness would be accelerated.

Despite its laudatory purposes, the K-1 Program experienced considerable difficulty during its first and second year. A district committee cited the K-1 Program as having problems due to homogeneous grouping that resulted in "difficult to manage classrooms; lack of appropriate peer models; and a relatively high number of students referred to special education" (At-Risk Committee Report, 1989).

In addition to the concerns raise directly from experience with the K-1 program, educational researchers were reporting the negative effects of retention. In spite of all the additional resources, placement in K-1 was grade retention. Grissom and Shepard (1989) found in their studies of thousands of students that those who had been retained were 20 to 30 percent more likely to drop out of school than similar achieving students. Holmes (1989) found that retained students did worse than comparable promoted students on measures of social adjustment, behavior, and attendance. Shepard (1989) reported that when researchers followed extra year children, meaning practices like the K-1 Program, to the end of 1st grade or as far as 5th grade that the extra year children performed no better academically despite being a year older for their grade.

During the 1989-1990 school year, the Des Moines Public Schools initiated efforts comparing the effects of existing K-1 services for at-risk first grade age students with alternative services for similar students promoted to first grade.

Population:

Two groups of students participated in this study and are classified as promoted and non-promoted for purposes of comparison. The non-promoted students in this study included 32 students randomly selected from K-1 classrooms. The promoted kindergarten students included 16 students from the ten elementary buildings randomly selected to participate in the Neighborhood Schools Service Delivery Project and four students randomly selected from a pilot K-1 project at King School. All students previously qualified for K-1 classrooms as the result of being recommended by their teachers and achieving low scores on the kindergarten checkpoint and the Metropolitan Readiness tests.

Due to attrition caused by student mobility in the Neighborhood Schools project, the two promoted groups were collapsed into one set for the purpose of comparing the effects on promoted low skilled students with the effects non-promotion (K-1 class placement) low skilled students. In addition, student absences on testing days reduced the size of the control group for some data comparisons.

Method:

Non-promoted students were placed in special full-day transitional kindergarten classrooms at five sites in Des Moines elementary schools. Students were bussed from their home schools to the K-1 sites. The promoted students in the Neighborhood Schools Project were maintained in their home schools. The promoted students at King School were taught in an open space school where students were grouped with other first grade students and had two teachers.

The treatment provided to K-1 identified students in the Neighborhood Schools Project consisted of placement in regular first grade classrooms. Special assistance was provided by an itinerant teacher who worked with K-1 and other students identified by their teachers as not progressing adequately. Students were seen either one or two times per week at five of the schools and seen daily for two periods of three to four weeks at five schools. Overall, these students received less special attention than comparable students in

K-1 classrooms. They also followed the first grade curriculum to the maximum extent they could participate.

The students in the K-1 classrooms were provided with a teacher-pupil ratio of one teacher to 15 to 18 students. The curriculum was specially designed to provide students with developmentally appropriate curriculum and school readiness training.

The same curriculum was provided to K-1 students at King School. The major difference was that they were co-located with more successful first grade students at that school.

Procedures:

Three null hypotheses were posed with regard to the two groups. They are as follows:

1. Prior to intervention, there were no significant differences between the promoted and non-promoted groups on the Metropolitan Readiness Test scores.
2. After intervention, there would be no significant differences between the promoted and non-promoted groups on the Metropolitan Readiness Test scores.
3. After intervention, there would be no significant differences between the promoted group and the non-promoted group on a measure of self-concept.

Due to the small number of students participating in this study, a liberal level of significance of .10 would be applied to determine significant differences.

Metropolitan Readiness test scores from 88-89 school year were collected from student records. This test information provided composite, reading and math scores. The test score from the promoted group and the non-promoted were compared to determine whether or not the groups were comparable prior the beginning of the 1989-1990 school year. The same tests were readministered to all K-1 students and the K-1 eligible students during the first two weeks of May, 1990. The test scores of promoted and non-promoted group were compared to determine if one group out performed the other.

The Joseph's Early Childhood Self-Concept Scale was administered to the students selected for this study. The results of this assessment were also compared.

Results:

The first question to be addressed was whether or not the groups were equivalent. All students in both groups met the same district criteria for eligibility. The specific comparison of group means on the Metropolitan Readiness Test Scores provided a more explicit comparison to the promoted and non-promoted groups. A simple *t*-test (Elzey, 1987) was used to compare the means. The results are represented on table 1.

Table 1
Metropolitan Readiness Test Administered Spring 1989

	Promoted	Non-promoted	*t*	df	*p*
Number	19	30			
Composite Mean	34.105	33.667	.139	47	.884
S.D.	8.608	11.891			
Reading Mean	26.368	25.733	.255	47	.796
S.D.	6.906	9.347			
Math Mean	8.737	7.933	.605	47	.556
S.D.	5.626	3.695			

On the comparison of composite scores, the promoted group obtained a mean of 34.105 and standard deviation of 8.608. The non-promoted group obtained a mean of 33.667 and standard deviation of 11.891. The level of significance for 47 degrees of freedom was .139. This was not significant according to the *t*-test tables. Both the reading and math subtests resulted in similar nonsignificant *t* scores. The null hypothesis that the groups were not different is accepted.

The second hypothesis is that there would be no significant differences between groups on the Metropolitan Readiness test after one year of intervention. Raw score comparisons were made using t-tests for composite, reading and math scores. Table 2 presents the data for these comparisons.

Table 2
Metropolitan Readiness Test Administered Spring 1989

	Promoted	Non-promoted	*t*	df	*p*
Number	19	30			
Composite Mean	67.632	59.871	1.91	48	.058*
S.D.	15.503	12.904			
Reading Mean	50.684	45.710	1.54	48	.124
S.D.	12.320	10.159			
Math Mean	16.947	14.161	2.21	48	.03**
S.D.	3.674	4.663			

*significant at the .1 level
**significant at the .05 level

The composite score mean for the promoted group was 67.632 with a standard deviation of 15.503. The means of 59.871 and standard deviation of 12.904 was obtained for the non-promoted group. The *t*-test comparison yielded a score of 1.91 which reaches the .1 level of significance. The reading score mean for the promoted group was 50.684 with a standard deviation of 12.320. A mean of 45.710 and standard deviation of 10.159 was obtained for the reading subtest. The statistical comparison yielded a *t* value of 1.54 which approaches significance but does not reach a traditionally accepted level for research purpose. The mathematic subtest score mean for the promoted group was 16.947 with a standard deviation of 3.674. A mean of 14.161 and standard deviation of 4.663 was obtained for the non-promoted group. The comparison yielded a t value of 2.214 which is significant at the .05 level. The second hypothesis that there would be no significant differences on Metropolitan Readiness Test scores is rejected for composite scores and math subtest scores but it is accepted for reading subtest scores.

A second run of the data comparing just the students from the Neighborhood Schools project with K-1 students achievement obtained essentially the same results as the data including promoted students from King School.

The third hypothesis that there would be no significant difference between the two groups on a measure of self-concept was

also examined using a *t* test comparison and is represented on table 3.

Table 3

t Test for Independent Samples
Joseph Early Childhood Self-concept Inventory

	Promoted	Non-promotes	*t*	*df*
Number	19	32		
Mean	24.789	24.156	.547*	49
Standard deviation	3.838	4.089		

*not significant

The promoted group obtained a mean score of 24.789 and standard deviation of 3.838 on the Joseph's Early Childhood Self-Concept Inventory. The non-promoted group scored a mean of 24.156 and standard deviation of 4.089 The *t* test comparison yielded a t value of .547 for 49 degrees of freedom. The hypothesis that there were no significant differences in self-concept between the two groups is accepted.

Additional data was collected on both groups which are not amenable to statistical analysis. The number and types of special education placement, number of students retained, and other outcomes were examined. Table 4 presents this data.

Table 4

Descriptive Outcome Data

	Promoted	Non-Promoted
Students placed in Special Education	6 of 16	6 of 32
Students retained without Special Education*	4	0
Students retained in addition to Spec. Ed. placement	3	0
Special Education placements:		
Learning disabilities resource	1	2
Mental disabilities resource	4	1
Behavior disorders resource	1	0
Students placed in Special Ed. with Metro scores below 4th percentile	4	4

*Two retained students parents refused special education placement.

It should be noted that retention in the K-1 program is not an option since all students are already retained by virtue of their participation in the program.

Discussion

Due to the small number of students in the promoted group, all conclusions from this first year must be considered cautiously. Despite the need for caution, the results of this study support results found in other studies where students were provided transitional kindergarten experiences.

The results of this study support the conclusions drawn by others who have studied extra year services and kindergarten retentions. Shepard's and Smith's (1990) review and meta analysis of retention of kindergarten students studies found no significant advantages for that common practice. They also indicated that "controlled studies do not support the benefits claimed for" in K-1 type programs. The conclusion of "no benefit" held true even where a special transition curriculum was provided rather than simple kindergarten retention. It appears that promotion to first grade results in greater achievement on the part of the K-1 eligible students. In the academic achievement area, composite and math scores on the Metropolitan Readiness Test significantly favor the promoted group. As might be expected, these students were perceived as being among the poorest performing students in their first grade classrooms and nearly half were retained or placed in the

special education resource program. Despite apparent failure relative to their first grade classmates, they achieved more than their retained counterparts in the K-1 program.

With regard to self-concept, there appears to be no advantage in assignment to the K-1 classrooms. Despite smaller classes and a less frustrating developmentally appropriate curriculum, the K-1 students did no better than the promoted group on the Joseph's Early Childhood Self-Concept scale. In addition to seeing no advantage in development of self-concept during the K-1 experience, researchers indicate that the retention factor is likely to lead to more long term problems in the areas of social adjustment, attitudes toward school, school behavior and attendance (Holmes, 1989; Shepard, 1989). Researchers generally recommend that students should be promoted along with their same age peers and be given additional assistance.

We did not collect enough data nor do we have the resource to conduct a factor analysis to learn specifically which variables contributed to these results. We can only surmise that the presence of high functioning peer models, a more demanding curriculum, and lack of stigma associated with removal from their home schools contributed to the greater achievement of the promoted group.

Even if there were no significant differences in favor of the promoted group, the cost-effectiveness of the K-1 Program should be questioned. A finding of no differences would hardly make expenditure of district funds worthwhile when considering the benefit to students and the cost of providing this special service. We do not have an explicit analysis of costs due the nature of itinerant services being spread across many students not included in this study. However, there are some deductions that appear appropriate. Over half of the promoted group succeeded in first grade and will be promoted to second grade without the benefit of special education. For the 8 students promoted, this represents a savings to the district of approximately $24,000 by simply maintaining them on a traditional graduation schedule. Additional savings is was incurred by avoiding transportation costs to K-1 centers of approximately $250 per student. For the 1989-1990 school year that was $4,000. There was also a savings in classroom space and materials.

If these same savings were projected across the entire K-1 program, conservative savings estimates are as follows:

1. six more classrooms would be available;
2. over $20,000 in transportation would be saved;
3. over $135,000 due to reduced retentions would be saved; and
4. materials costs in the six K-1 classrooms would be saved.

Recommendations:

As the result of conducting this study, there are indications of a need to conduct additional research. Data collection activities should continue during the 1990-1991 school year to be able to compare these same results with a larger *n* in the promoted group. In addition, it is apparent that data should be collected on the first grade success of former K-1 students. It will be important to know if former K-1 students are placed in special education and retained again at rates similar to the promoted students. In addition, more explicit study of the costs involved in providing K-1 services appears warranted.

As we interpret the data, funds for the K-1 program may not be well spent and the district may find that other options will be more successful than services that involve retention. According to Peterson, DeGracie, and Ayabe (1987) retention with remediation is superior to retention alone, but promotion with remediation provides greater benefit. Among the remediation options discussed in the professional literature are summer school services for at-risk students, before school and after school supplementary instruction, instructional aids to work with targeted children, computer assisted instruction, and no-cost peer tutoring. Instructional strategies such as cooperative learning (Johnson and Johnson, 1983) and the Ohio Reading Recovery program also demonstrate promise without the prospect of retention. It is our recommendation that the school district consider all of these options.

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Position Statement on STUDENT RETENTION

The National Association of School Psychologists is committed to promoting educational practices that are demonstrably effective in enhancing the educational attainment of all children. The retention of students, while widely practiced, is in large measure not substantiated by sound research.

The cumulative evidence indicates that retention decisions cannot be validated using any standardized or competency-based tests and that retention can negatively affect achievement and social/emotional adjustment.

Retention has not been shown to be successful:

— When it is employed in lieu of other, more effective interventions when students fail to learn;

— When it is used to postpone or supplant special education services;

— When it is used at the secondary level where it correlates positively with student drop-out rates;

— When retention or delayed school entrance is used with students with social or behavior deficits linked to "developmental immaturity."

Retention is less likely to be harmful when students:

— lack serious academic deficits in the year prior to retention,

— have positive self-esteem and good social skills;

— show signs of difficulty in school because of lack of opportunity for instruction rather than lack of ability; and

— do not have serious social, emotional, or behavioral deficits.

Therefore it is resolved that the National Association of School Psychologists will:

1) Encourage early identification and intervention of academic behavioral, and/or emotional difficulties to avoid the inappropriate use of retention;

2) Encourage use of intervention other than retention for students in academic difficulty;

3) Promote and publicize research comparing retention to alternative intervention practices at the kindergarten and first grade level with children determined to be at risk for school failure;

4) Encourage school psychologists to assist in the decision-making process about retention of individual students by examining;

   a) the child's school and developmental history,

   b) reasons for school failure (e.g., emotional problems, low ability, frequent school moves or absences),

   c) the effectiveness of instruction (e.g., teaching practices, the match between teaching and learning style and between student achievement level and curricular demands),

   d) the type and quality of alternative strategies (e.g., direct instruction, remedial services, cooperative learning, peer tutoring, etc.),

   e) student attitude toward retention and level of parental support,

   f) the extent of alternative programming available in both the new and repeated grade;

5) Encourage state affiliate organizations and individual members to adopt position and support research which promotes alternative interventions to retention.

Adopted 1988