TABLE OF CONTENTS

List of Tables ................................................................................................................................. iii
List of Figures ................................................................................................................................. iv
List of Appendices .......................................................................................................................... v
Executive Summary ......................................................................................................................... vi

Chapter I: Introduction ..................................................................................................................... 1
  • Background and Purpose ........................................................................................................... 1
  • Focus for the Program Evaluation ........................................................................................... 1
  • Design of the Report .................................................................................................................. 2

Chapter II: Program Description ..................................................................................................... 3
  • Criteria .................................................................................................................................. 3
  • Curriculum .............................................................................................................................. 3
  • Service and Placement Options .............................................................................................. 3
  • Engagement Activities .............................................................................................................. 5
  • Partner District Collaboration Efforts ...................................................................................... 5
  • Enrollment Data ...................................................................................................................... 5

Chapter III: Literature Review ......................................................................................................... 6
  • Instructional Methods and Activities ...................................................................................... 7
  • Instructional Environments ...................................................................................................... 7
  • Family Involvement and Support ............................................................................................ 8
  • Inclusion ................................................................................................................................. 8
  • Challenging Behavior ............................................................................................................. 9
  • Personnel ............................................................................................................................... 9
  • IEP and Progress Monitoring ................................................................................................. 10

Chapter IV: Methodology ................................................................................................................. 11
  • Process ................................................................................................................................ 11
  • Population .............................................................................................................................. 11
  • Methods for Data Collection and Analysis .......................................................................... 11
Chapter V: Results

- Demographic Data ................................................................. 17
- Autism Quality Indicators ..................................................... 20
- Staff Surveys ............................................................................. 23
- Parent Surveys ......................................................................... 25
- Comparison of Parent and Staff Survey Responses .................. 27
- Public Forum ............................................................................. 28
- Classroom Observations ............................................................ 29
- Comparison of Classroom Observations and Staff Surveys ........ 30
- Record Review: IEP and Progress Monitoring .......................... 32
- MAP Data ................................................................................ 36
- Cost Analysis .......................................................................... 42

Chapter VI: Summary and Recommendations ............................ 44

- Summary .................................................................................. 44
- Limitations ................................................................................ 46
- Recommendations ..................................................................... 47

References .................................................................................. 48

Appendix ...................................................................................... 51
LIST OF TABLES

Table 1  Evaluation Focus Questions and Data Collection Methods .......................... 12
Table 2  Data Sources and Data Collection Methods ........................................... 12
Table 3  Strength Areas on Staff Survey .............................................................. 23
Table 4  Progressing Areas on Staff Survey ......................................................... 24
Table 5  Teacher Surveys: Comparison Across Grade Levels ............................... 24
Table 6  Overall Parent Satisfaction ..................................................................... 25
Table 7  Strength Areas on Parent Survey ............................................................. 26
Table 8  Progressing Areas on Parent Survey ....................................................... 26
Table 9  Comparison of Parent and Staff Survey Results, Above Average Scores .............................. 27
Table 10  Comparison of Parent and Staff Survey Results, Progressing Scores ........................................................................ 27
Table 11  Parent and Staff Survey Results .............................................................. 28
Table 12  Top Areas of Need Expressed by Public Forum Participants .................. 28
Table 13  Classroom Observation Rating Scale .................................................... 29
Table 14  Strength Areas on Classroom Observations ......................................... 29
Table 15  Progressing Areas on Classroom Observations ..................................... 30
Table 16  Differences Between Observations and Staff Survey ............................ 31
Table 17  Significant Differences in Partner District Autism and Cross-Categorical Classroom Observations ................................................................. 31
Table 18  IEP Goal Areas .................................................................................. 33
Table 19  IEP Goal Statements: Percentage of Goals Meeting Standard ............... 33
Table 20  Progress Monitoring – Process Results .................................................. 34
Table 21  Progress Monitoring – Practices Results ................................................. 35
Table 22  Progress on IEP Goals ...................................................................... 35
Table 23  MAP Communication Arts- Student Numbers and Level
Not Determined ................................................................................................. 41
Table 24  MAP Index Profiles: Communication Arts & Mathematics .................... 41
Table 25  Annual Cost of Services to Students with Autism by Placement ............. 43
Table 26  Annual Cost for Autism Services as Reported by SEEP for 1999-00
and Extrapolated at 3.0% Yearly Estimated Increase ................................... 43

LIST OF FIGURES

Figure 1  National, State and District Trends in Autism ....................................... 17
Figure 2  SSD Students Diagnosed with Autism .................................................. 18
Figure 3  Student Placement ........................................................................... 18
Figure 4  Student Placement SSD and State 2003-04 ......................................... 19
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>MAP Communication Arts, Gr. 3</td>
<td>36</td>
</tr>
<tr>
<td>6</td>
<td>MAP Communication Arts, Gr. 7</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>MAP Communication Arts, Gr. 11</td>
<td>37</td>
</tr>
<tr>
<td>8</td>
<td>MAP Mathematics, Gr. 4</td>
<td>38</td>
</tr>
<tr>
<td>9</td>
<td>MAP Mathematics, Gr. 8</td>
<td>38</td>
</tr>
<tr>
<td>10</td>
<td>MAP Mathematics, Gr. 10</td>
<td>39</td>
</tr>
<tr>
<td>11</td>
<td>MAP Communication Arts, 2004</td>
<td>39</td>
</tr>
<tr>
<td>12</td>
<td>MAP Mathematics, 2004</td>
<td>40</td>
</tr>
<tr>
<td>13</td>
<td>Percentage of Autism Population Who Took the MAP 2004</td>
<td>40</td>
</tr>
</tbody>
</table>
LIST OF APPENDICES

Appendix 1-1  Committee Members

Appendix 2-1  SSD Services for Students with Autism (Census Data, 2002-2004)
Appendix 2-2  Students with Autism by SSD region, Percentage Change
Appendix 2-3  SSD Students with Autism by Gender
Appendix 2-4  SSD Students with Autism by Race/ethnicity
Appendix 2-5  SSD Students with Autism by Grade
Appendix 2-6  SSD Students with Autism - Placement by Grade
Appendix 2-7  Students with Autism – Incidence Rate by District

Appendix 4-1  Staff/Administrator Survey
Appendix 4-2  Parent/Guardian Survey
Appendix 4-3  Classroom Observation Form
Appendix 4-4  IEP and Progress Monitoring Procedures
Appendix 4-5  IEP and Progress Monitoring Tracking Sheet

Appendix 5-1  Autism Survey Results: Teachers and Administrators
Appendix 5-2  Autism Survey Results by Grade Level
Appendix 5-3  Autism Survey Results: Parents
Appendix 5-4  Autism Survey Results: Comparison of Parents and Staff
Appendix 5-5  Public Forum Comments by Category
Appendix 5-6  Classroom Observation Results
Appendix 5-7  Comparison of Classroom Observation and Survey Results
Appendix 5-8  Comparison of Partner District Autism and Cross Categorical Classroom Observations
Appendix 5-9  IEP and Progress Monitoring: Characteristics of Sample
Appendix 5-10 IEP and Progress Monitoring Review Results
Appendix 5-11 IEP and Progress Monitoring: Goal Areas Addressed on IEPs
Appendix 5-12 SEEP: Total Expenditures for Students with Disabilities
EXECUTIVE SUMMARY

Introduction

Special School District is committed to program evaluation as a foundation for the continuous improvement process. The program evaluation framework approved by the Board of Education (2003) guides Special School District staff in conducting program evaluation activities to measure, analyze and effectively manage special education services and operations. The Autism Program Evaluation was a formative process occurring from September 2004 through February 2005. This summative report details the process, results and recommendations that will guide future improvement activities for this population.

Stakeholders were engaged as ongoing steering committee members, work group members, and as public forum participants. The committee membership included teachers, facilitators, related service staff, administrators, and parents (Appendix 1-1). The questions posed by the committee and approved by the Board of Education were designed to provide a review of services across the county and in all service delivery models.

The focus of the program evaluation was to answer six questions approved by the Board of Education:

1. What are nationally recognized best practices for students with autism?
2. What patterns are noted when looking at the total population of students with autism?
3. What outcome data are available?
4. What are the costs associated with the various levels of service?
5. What are the strengths of the services offered to students with autism?
6. What are the recommendations for improvement of autism service delivery?

Literature Review

During recent years autism has received increasing amounts of attention due to promising treatment programs and the escalating number of students receiving a diagnosis of autism. According to the Department of Education’s Office of Special Education Programming the number of students with a diagnosis of autism ages 6 to 21 that receive services under IDEA rose from 15,580 in the 1993 school year to 78,749 students in the 2001 school year (OSEP 2002).

Despite the increasing attention to autism spectrum disorders, group design research into best practices remains hard to interpret. Well-controlled group designs are difficult to implement due to the ethical considerations involved in withholding treatment from control groups and the logistical issues of controlling for the diverse nature of the disability. There does, however, exist a large body of single subject research that demonstrates progress utilizing specific intervention techniques (National Research Council 2001, p. 8).

In 2001, the New York State Education Department and the University of the State of New York created the Autism Program Quality Indicators (APQI). A self-study and improvement guide, the APQI was developed through literature review,
consultation with national experts, and field tests. The complete APQI consisted of 14 broad areas including diagnostic protocol, IEP development, curriculum, instructional activities, instructional methods, environments, progress monitoring, family support, inclusion, community collaboration, transition planning, challenging behavior, personnel, and program evaluation. After reviewing the available literature, the Autism Program Evaluation Committee adapted the APQI to serve as a framework for the program evaluation process. The revised Quality Indicators consisted of 6 broad areas including: instructional methods and activities, instructional environments, family involvement and support, inclusion, challenging behavior, and personnel. These six areas formed the key components of parent and staff surveys, direct observation of classrooms, and response areas for the public forum.

A process for monitoring IEP content was presented by Iowa educators at the Innovations in Education Conference in September 2004. The document, *IEP Goals, Progress Monitoring and Data-based Decision–making Review Procedures* cited rigorous standards for the design and use of monitoring procedures to support instructional decision making. After reviewing the document, the Autism Program Evaluation Committee adapted the standards to generate a protocol and tracking document for the IEP and progress monitoring review.

**Methodology**

Data were gathered by review of available demographic information, quality indicators derived from the literature review, teacher and administrator surveys of quality indicators and analysis of open-ended comments, parent survey and analysis of comments, comparison of parent survey results with staff survey results, public forum, classroom observations and teacher interviews, comparison of on-site observations with staff perception on the same indicators, IEP and progress monitoring review, MAP data and cost analysis.

**Results**

The committee members met to review, assimilate, and analyze the program evaluation data. The costs associated with various service delivery options were reviewed, but it was determined that individual student needs may account for the variations in educational expenditures for students with autism better than disability category alone. Through discussion and questioning, the committee identified areas of strength and weakness that were noted across multiple data sources.

**Cost Analysis**

The most costly service was for students in purchase of service ($41,503), followed by public separate school ($34,760), then by students in self-contained classrooms in partner districts ($28,507) and finally by students who spend less than 60% of their day in a special education setting ($8,162). According to a poll of administrators, 92 students who are included in general education classes have fulltime paraeducator support. When the cost of the paraeducator is included, the resulting estimated annual per pupil cost is $33,731. The teachers of classrooms in partner
districts indicated that students who were included for a portion of the day in general education classes were, in many cases, accompanied by a staff person. The same students may not require one-to-one support while in the structured atmosphere of the special education setting. Since it is best practice to provide opportunities to interact with nondisabled peers, inclusion of students a high priority. It is surmised that the need for additional paraeducators to facilitate inclusion in the general education classroom impacts the cost of services at that level.

**Strengths**

Several areas of strength were identified. Parents commonly noted that the teaching staff is of high caliber and that the special education teachers treat their children with respect and expect very good work from them. Parents also reported that they are treated as a respected member of the team. Parental survey results and comments indicated that parents feel that their children’s needs are being met and that they are satisfied with their children’s education.

Instructional strengths were noted in the adaptation of instructional methods based upon the range of abilities and learning styles of students and in the use of a variety of instructional formats, as reported by staff and documented by classroom observations. The observations also revealed strengths in the use of positive to negative statements and the use of instructional formats that support active engagement of students.

Seventy percent of the IEP goals were written in a measurable manner. Performance on state assessments shows a trend towards more students being given the opportunity to take the MAP test.

**Weaknesses**

The evaluation identified seven main areas of challenge.

**Training and technical support**

Both staff and parents noted ongoing support and training as an area of need for paraeducators, general education teachers and special education teachers. Staff also reported a need for increased support and technical assistance specific to students with autism. They requested support and training that is accessible and specific to students on their caseloads.

**Progress monitoring**

The IEP review identified weaknesses in progress monitoring process and practices: a) measurement of progress on the IEP goals, b) use of a quantitative monitoring of student progress, c) alignment between IEP goals and progress monitoring material, d) baseline data, e) frequent measures of performance to make an informed judgment about responsiveness to instruction, and f) documentation of adjustments in instruction.

**Students functioning at or near grade level**

Parents reported that all personnel need training to understand and work with students who perform at or near grade level. In addition, demographic analyses
revealed that 34% of students spend less than 21% of their day in special education settings. With one third of the students receiving the majority of their education in the general education classroom, further information is needed to determine the degree to which additional supports are necessary.
Secondary students
Statistically significant differences among grade levels were noted for eleven quality indicators. For these indicators, the ratings for elementary teachers were higher than secondary teachers. Placement data indicated that a higher percentage of secondary students receive services in separate schools. In addition, analysis of demographic trends indicated an anticipated growth in the number of secondary students with autism over the next several years. Based upon these data sources, further study regarding the effectiveness of services at the middle and high school levels is warranted.

Social skills
Parents expressed a concern that staff may not understand the full impact of the social skills deficits common to students with autism. They perceive the need for a framework for social skills development and expectations and a set of effective strategies that can be tailored to meet the very individualized needs of a student. Available peer-reviewed literature also supports the need for structured social interactions. Both parents and teachers stated that peer training would be helpful in supporting students in the general education classroom and facilitating peer interactions.

Sensory supports
Accessibility to sensory supports was noted as an area for improvement based on classroom observations. During the parent forum, parents also expressed a need for an increased accessibility to sensory supports. Use of visual supports and schedules was a progressing area for the classroom observations.

Effective communication with parents
Parents requested an increase in communication between home and school through survey comments and during the public forum. The teachers rated regular communication with parents much higher than did parents. Accessing services from other agencies was noted as an area of need according to survey results. In contrast, the majority of the teachers perceived that they agreed or strongly agreed that parents had assistance to accessing these services.
Limitations

The data collected for this evaluation provided the committee with a significant amount of information that had not previously been reviewed as a whole to lead towards systemic improvement. However, in the process of data analysis, the committee noted several limitations that may have affected the reported results. These limitations should be taken into consideration when interpreting the results and designing future program evaluation activities.

1. Because of logistical concerns, direct classroom observations were not attempted in the general education setting or of students in special education less than 60% of the time.

2. Student input was not included.

3. Sufficient information to make specific recommendations about services for students at the secondary level and for students performing at or near grade level was not collected.

4. Input from general educators was not collected regarding their perception of supports and services specific to autism.

5. Quality indicators did not explicitly address social skills.
Program Evaluation for Students with Autism

Recommendations

The recommendations address identified needs in the areas of training and technical support, progress monitoring, student support, social skills, sensory supports and parent communication. Action plans have been developed to address the recommendations and align with the district’s rolling plan objectives.

1. Develop a model for training and on-going support that is sufficient to meet the needs of the growing population of students with autism. Considerations should include general educators, special educators and paraeducators, and non-disabled peers.

2. Implement consistent and meaningful progress monitoring data collection to guide instruction and provide feedback to parents. Consideration should be given to professional standards for progress monitoring processes and practices, and implementation of data-based decision-making.

3. Gather additional data regarding supports for students with autism performing at or near grade level and services provided at middle and high school levels.

4. Provide effective instructional resources to improve students’ social competencies.

5. Investigate the use and impact of sensory supports.

6. Develop a set of recommendations to foster effective communication between parents and staff. Consideration should be given to awareness of available district and/or community resources, reporting of skill development and school performance.
CHAPTER I

INTRODUCTION

Background and Purpose

Special School District is committed to program evaluation as a foundation for the continuous improvement process. The program evaluation framework approved by the Board of Education (2003) guides Special School District staff in conducting program evaluation activities to measure, analyze and effectively manage special education services and operations. The Autism Program Evaluation was a formative process occurring from September 2004 through February 2005. This summative report details the process, results and recommendations that will guide future improvement activities for this population.

Stakeholders were engaged as ongoing steering committee members, work group members, and as public forum participants. The committee membership included teachers, facilitators, related service staff, administrators, and parents (Appendix 1-1). The questions posed by the committee and approved by the Board of Education were designed to provide a review of services across the county and in all service delivery models.

Focus for the Program Evaluation

The focus of the program evaluation was to answer the following questions approved by the Board of Education.

1. What are nationally recognized best practices for students with autism?
2. What patterns are noted when looking at the total population of students with autism?
3. What outcome data are available?
4. What are the costs associated with the various levels of service?
5. What are the strengths of the services offered to students with autism?
6. What are the recommendations for improvement of autism service delivery?

Design of the Report

The report documents the review of current literature and the methodology used to evaluate the program. The results and discussion of data is based upon quality indicators that have been identified through literature review of best practices for students with autism. The limitations of the program evaluation are addressed as well as recommendations of the evaluation team. The committee has also developed action plans that may serve to guide the implementation of any recommendations that the Board of Education approves.
CHAPTER II

PROGRAM DESCRIPTION

Criteria

“Autism” is a developmental disability significantly affecting verbal or nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

Curriculum

Curriculum for school-age students with the educational diagnosis of autism supports the general education curriculum of the school the student attends. While all students participate in specific curricula, additional instructional strategies, based on best practices associated with their educational disability are employed to access the curriculum and demonstrate achievement. Based on the student individualized education plan and best practices documented for the area of autism the following instructional activities are frequently implemented, but not limited to:

1. Functional, spontaneous communication instruction
2. Daily social instruction
3. Functional academic skill instruction
4. Skill generalization in the natural environment

Service and Placement Options

The individual needs of each child are considered by the IEP team to determine educational programming, services and placement. Educators and parents of children work together to consider the best environment and services to meet the child’s educational needs. The team follows three basic guidelines: a) maintaining the child in the least restrictive setting where services can meet special education needs; b) considering all service delivery options before finalizing placement decisions; and c) considering carefully the child and family variables along with evaluation information in making programming decisions.

Given these guidelines, educators and parents consider the following placement options:
1. Outside Regular Class less than 21 percent of day: Children with disabilities who receive special education and related services outside the regular classroom for less than 21 percent of the school day.
2. Outside Regular Class at least 21 percent/No more than 60 percent: Children with disabilities who receive all of their special education and related services outside
the regular classroom for at least 21 percent but no more than 60 percent of the school day.

3. **Outside Regular Class more than 60 percent of day**: Children with disabilities who receive all of their special education and related services outside the regular classroom for more than 60 percent of the school day. This category does not include children who received education programs in public or private separate day or residential facilities.

4. **Public Separate (Day) Facility**: Children with disabilities who receive all of their special education and related services for greater than 50 percent of the school day in public separate facilities.

5. **Private Separate (Day) Facility**: Children with disabilities who receive all of their special education and related services, at public expense, for greater than 50 percent of the school day in private separate facilities.

6. **Public Residential Facility**: Children with disabilities who receive all of their special education and related services for greater than 50 percent of the school day in public residential facilities.

7. **Private Residential Facility**: Children with disabilities who receive all of their special education and related services, at public expense, for greater than 50 percent of the school day in private residential facilities.

8. **Homebound/Hospital**: Children with disabilities who receive all of their special education and related services in hospital or homebound programs.
Engagement Activities

Families are the most important social unit for children. Parents are linked with the Parent Advisory Councils within their home districts. Training is provided to Parent Advisory Council within their home districts. SSD provides additional resources and support through the Family & Community Resources Center, which also coordinates an Autism Resource Fair in the fall. Topics on autism are the most requested information from the Family & Community Resource Center.

Partner District Collaboration Efforts

Special education staff and administrators participate in numerous collaborative activities with partner districts. Included are professional development activities, Parents as Teachers workshops, care teams, preschool parent/child activities, parent conferences, and kindergarten transition activities.

Enrollment Data

The Missouri Department of Elementary and Secondary Education publishes a Special Education District Profile annually for each district in the fall of the school year using the December 1 census data from the previous year. The profile reports contain twelve tables compiling core data entered for the school year reporting cycle. The tables are based on five general reporting areas:

1. School Age Child Count Data
2. Early Childhood Child Count Data
3. Missouri Assessment Program Data
4. Discipline Incidents Data

The Special Education District Profile is one of the data sources used to evaluate performance goals and indicators, compare local data to Missouri data, and provide information for program evaluation through special education monitoring of performance data. The census data for autism can be found in Appendix 2 and includes information taken from the partner district’s Special Education District Profiles.
CHAPTER III

LITERATURE REVIEW

During recent years autism has received increasing amounts of attention due to promising treatment programs and the escalating number of students receiving a diagnosis of autism. According to the Department of Education’s Office of Special Education Programming the number of students with a diagnosis of autism ages 6 to 21 that receive services under IDEA rose from 15,580 in the 1993 school year to 78,749 students in the 2001 school year (OSEP 2002).

According to the National Research Council (2001, p.8), group design research into best practices remains hard to interpret despite the increasing attention to autism spectrum disorders. Well-controlled group designs are difficult to implement due to the ethical considerations involved in withholding treatment from control groups and the logistical issues of controlling for the diverse nature of the disability. There does, however, exist a large body of single subject research that demonstrates progress utilizing specific intervention techniques.

In 2001, the New York State Education Department and the University of the State of New York created the Autism Program Quality Indicators (APQI). A self-study and improvement guide, the APQI was developed through literature review, consultation with national experts, and field tests. The complete APQI consisted of 14 broad areas including diagnostic protocol, IEP development, curriculum, instructional activities, instructional methods, environments, progress monitoring, family support, inclusion, community collaboration, transition planning, challenging behavior, personnel, and program evaluation. After reviewing the available literature, the Autism Program Evaluation Committee adapted the APQI to serve as a framework for the program evaluation process. The revised Quality Indicators consisted of 6 broad areas including: instructional methods and activities, instructional environments, family involvement and support, inclusion, challenging behavior, and personnel. These six areas formed the key components of parent and staff surveys, direct observation of classrooms, and response areas for the public forum.
Effective educational programming for students with autism often addresses a wide range of skill development including academics, communication and language skills, social skills, self-help skills, behavioral concerns, and leisure skills. Appropriate instructional methods and activities are linked to reductions in problematic behavior as well as increases in skill acquisition.

The use of a variety of instructional formats and intervention levels, active engagement of students, programming for generalization, and alternating difficult and easy tasks can enhance student performance. Koegel, Koegel, and Surrat (1992) found that linking individualized motivation to a naturalistic learning environment resulted in increased language acquisition and decreased inappropriate behavior. Gillum, Camarata, Nelson, and Camarata (2003) found that naturalistic procedures resulted in faster language acquisition than analogue conditions. McCurdy, Skinner, Grantham, Watson, and Hindman (2001) found that alternating easy and difficult math problems increased on-task behavior.

The National Research Council (2005 p.163) reviewed ten autism treatment agencies and identified planning for generalization, parent involvement and active engagement of students as important components of the programs. The active engagement of students is considered important enough to student learning that it is often utilized as a dependent variable when evaluating treatment efficacy (e.g., Logan, Bakeman, & Keefe 1997; Derby, Johnson, Luiten, & Robert-Gwinn, Weber 2001, McCurdy et al. 2001).

While modification of the instructional environment is not sufficient to eliminate all behavior problems, careful attention to this primary level of support can eliminate behavior problems in 80% of a school’s total population (Scott & Eber 2003). Effective instructional environments incorporate clearly defined areas, the minimization of distractions, visible rules and routines, access to sensory supports, and frequent positive reinforcement. Implementation of primary supports, such as establishing and teaching clearly defined rules and routines as well as rewarding appropriate behavior can result in increased student instructional time and an overall fiscal savings for the school as estimated by administrative time and salary calculations (Turnbull et al. 2002; Scott & Barrett 2004).
Family Involvement and Support

Family members’ unique knowledge of the student is critical in the goal of effective education. Family involvement becomes especially important for children with autism given deficits in communication and the difficulties in generalization experienced by students with autism (National Research Council 2001 p. 35). In order to ensure family involvement, members need to be supported as active participants in the student’s education, family members need to be informed of available service options, and regular communication must occur between the family and school. In its review of agencies, the National Research Council (2001 p.152) found that although the mechanism creating or sustaining parent involvement varied, explicit family participation was characteristic of all agencies reviewed.

Inclusion

One of the major provisions of the Individuals with Disabilities Education Act (IDEA) is an appropriate education for students with disabilities in the least restrictive environment. Students with disabilities are guaranteed educational services in settings that best meet individual needs and offer the greatest opportunities for interactions with students without disabilities (Smith and Simpson 2002). It is not sufficient, however, to simply surround a student with autism with non-disabled students. The social and communication deficits of student with autism typically require systematic and structured interactions to achieve meaningful peer relationships. Support from teachers and peers can help students with autism develop and generalize necessary social skills (Wagner 1999).

A number of studies document the positive effect systematically implemented inclusion opportunities can have on students with disabilities (Brown, Conroy, & Odom 2001). Brown et al. (2001) outline a hierarchy of inclusion activities including improving student attitudes, incidental instruction of social skills, friendship activities, and social integration activities. These instructional activities rely on systematic training of and implementation by teachers and peer groups. Brookman et al. (2003) provide a detailed account of the implementation of an intervention package involving aide and peer facilitation as well as self-monitoring procedures to target specific social and behavioral goals for students with autism. Kamps et al. (1997) utilized a systematic peer training intervention to teach students with autism pivotal social skills.
Challenging Behavior

The functional analysis of behavior has been extensively studied in single subject research. A review of this research was presented by Hanley, Iwata, & McCord (2003). In addition, the 1997 amendments to IDEA included provisions for the use of functional behavioral assessment and positive behavior interventions. According to Hanley et al. (2003), although the specific methods of conducting functional assessments vary across research studies, it is the consensus of published research that identifying the function of challenging behavior and implementing a plan that addresses that function are important in successfully dealing with problematic behavior. Identification of the function of behavior alone, however, is not sufficient to successfully treat challenging behavior. Successful treatment of behavior problems also requires clear expectations, implementer knowledge of behavioral strategies, appropriate accommodations, the teaching of alternative behavior and the use of positive support.

In addition to a school-wide behavior support plan, March and Horner (2002) implemented a functional assessment process that included the development of appropriate alternative responses. March and Horner (2002) found that the identification of function coupled with the development of appropriate alternative responses resulted in the reduction of problematic behavior and immediate increases in task engagement. The authors also reported high ratings of social validity from the classroom teachers. In a review, Munk and Repp (2002) found that appropriate accommodations such as varying pace, task difficulty, and implementing student choice procedures was effective in reducing challenging behavior without resorting to aversive procedures.

Personnel

The National Research Council (2001 pgs 183-192) cites adequate numbers of personnel and adequate training of those personnel as critical issues facing autism treatment. Currently there is no system that provides national information on how many people are being trained or the numbers of established training programs (pg 184). Given that individual states may apply the criteria for diagnosing autism differently, it is difficult to even estimate the resources necessary to adequately train personnel working with students with autism spectrum disorders (pg 189).

According to the National Research Council (2001 pg. 188) the specific preparation practices utilized by the ten comprehensive programs that they reviewed varied widely. The National Research Council did identify a general framework of support that included providing initial training (lecture, workshops, and hands on practice), ongoing training through a mentorship or supervisor, and ongoing technical assistance provided to existing programs (pgs 189-190). A review of existing literature (e.g., Sarokoff & Sturmey 2004; Kuhn, Lerman, & Vorndran 2003) confirmed that a mix of package training techniques produce performance changes, however, each of the articles reviewed relied on some level of lecture, hands-on practice and then ongoing support. Green, Rollyson, Passante and Reid (2002) found that direct feedback systems maintained staff performance to a greater extent than indirect methods such as review of existing documentation even when staff demonstrated proficiency during initial training.

Clearly much more research in all areas of autism treatment needs to be completed. Many questions remain unanswered, and unambiguous research into treatment packages...
is scarce. However, the available research does lend enough information to guide student programming in a fashion that can lead to better outcomes for students with autism.

**IEP and Progress Monitoring**

A process for monitoring IEP content was presented by Iowa educators at the Innovations in Education Conference in September 2004. The document, *IEP Goals, Progress Monitoring and Data-based Decision–making Review Procedures* cited rigorous standards for the design and use of monitoring procedures to support instructional decision making. After reviewing the document, the Autism Program Evaluation Committee adapted the standards to generate a protocol (Appendix 4-4) and tracking document (Appendix 4-5) for the IEP and progress monitoring review.
CHAPTER IV

METHODOLOGY

The focus of this chapter includes the procedures involving the program evaluation process, population being reviewed, and methods of data collection and analysis used in the program evaluation for students with autism.

Process

The program evaluation process involved various stakeholders including parents and community members. A committee was established to work collaboratively on the program evaluation tasks. Committee members included an executive director, director, administrators, effective practice specialist, autism spectrum facilitators, and school psychologists / diagnosticians. The committee met every other week through the inquiry and development phase, weekly during the data collection phase and approximately twice weekly during the analysis and interpretive phase.

A parent work group was also formed to seek advice regarding parental input and potential recommendations.

Population

The population of this review was all students in Special School District who have an educational diagnosis of autism.

Methods for Data Collection and Analysis

There were eight methods used to collect data. The data collection methods used in addressing the focus questions approved by the Board of Education are noted in Table 1.
Table 1: Evaluation Focus Questions and Data Collection Methods

<table>
<thead>
<tr>
<th>Autism Program Evaluation Focus Questions</th>
<th>Data Collection Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Literature Review</td>
</tr>
<tr>
<td>1. What patterns are noted when looking at the total population of students with autism?</td>
<td>X</td>
</tr>
<tr>
<td>2. What are the nationally recognized best practices for students with autism?</td>
<td>X</td>
</tr>
<tr>
<td>3. What outcome data are available?</td>
<td>X</td>
</tr>
<tr>
<td>4. What are the costs associated with the various levels of services?</td>
<td></td>
</tr>
<tr>
<td>5. What are the strengths of the services offered to students with autism?</td>
<td>X</td>
</tr>
<tr>
<td>6. What are the recommendations for improvement of autism service delivery?</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 2: Data Sources and Data Collection Methods

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Data Collection Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Literature Review</td>
</tr>
<tr>
<td>SSD Administrators</td>
<td>X</td>
</tr>
<tr>
<td>SSD Teachers/Staff</td>
<td>X</td>
</tr>
<tr>
<td>SSD Parents</td>
<td></td>
</tr>
<tr>
<td>Purchase of Service Staff</td>
<td>X</td>
</tr>
<tr>
<td>Autism Program Evaluation Committee</td>
<td>X</td>
</tr>
<tr>
<td>Community</td>
<td></td>
</tr>
</tbody>
</table>

Literature Review / Quality Indicators of Best Practices

After conducting a literature review, the committee identified quality indicators that reflect effective practices in autism. Six components of effective educational programming for students with autism were identified: 1) instructional methods and activities, 2) instructional environments, 3) inclusion, 4) family involvement and support, 5) challenging behavior and 6) personnel. The quality indicators were used in the development of the teacher / administrator survey, parent / guardian survey, on-site observation form and public forum format. The IEP / Progress monitoring review forms were adapted from Iowa’s IEP Goals, Progress Monitoring and Data-based Decision-making
Review Procedures presented at the Innovations in Education Conference in September, 2004. The quality indicators were also incorporated into the IEP progress monitoring review forms.

Staff / Administrator Survey
The staff / administrator survey was sent to all teachers who had at least one school-age student with an educational diagnosis of autism on his/her caseload. The sample included all students on the district’s student information system as of October 25, 2004. The survey was sent to 568 teachers. The survey was also given to all school-age special education area coordinators who have self-contained autism classrooms in their area and all SSD principals and SSD assistant principals. There were 60 surveys sent to administrators in these groups.

The respondents were asked to rate their perception of the level of implementation of the quality indicators for the students with autism in their school/area using a five-point Likert scale with a rating of 1 denoting strongly disagree and a rating of 5 denoting strongly agree.

Parent / Guardian Survey
A parent survey was mailed to households of all parents/guardians of children with an educational diagnosis of autism. This sample included 1,039 parents/guardians who were on the district’s information database as of December 16, 2004.

Public Forum
A public forum was held to gather input from parents/guardians, partner district personnel, staff, and community members on quality indicator areas. Parents were notified of the forum in the letter accompanying the parent survey sent in the mail. Flyers were also provided to the members of the Parent Advisory Council, the ABA Advisory Council, the pupil personnel directors for the partner districts, and all district administrators. Notification of the forum was also posted on the district website. The forum was held from 6:30-7:30 p.m. in the Special School District Central Office on January 31, 2005. A brief overview of the program evaluation process and quality indicator areas was provided. A handout of the quality indicators was disseminated to participants. Individual posters were displayed around the room for each of the quality indicators. Committee members were available for questions or comments for each of the quality indicator areas. Participants were asked to write their perception of the district’s services to students with autism to include “areas of strength” and “areas of need” for each of the quality indicator areas. They posted their comments in the designated areas. There was also a general comment area for participants who had additional comments. The participants were also given the opportunity to address questions or concerns with the committee co-chairs during the forum.

The committee reviewed all comments provided by participants at the public forum. A content analysis was completed for the written feedback to determine strengths and areas for improvement as well as identifying topic areas that were common across data collection methods or samples.

Record Review: IEP and Progress Monitoring
A record review was used to assess the implementation of professional standards for writing IEP goals, setting up progress monitoring material, and implementing data-based
Program Evaluation for Students with Autism

decision making. The process involved tracking and analyzing information in three areas: a) IEP goal statements, b) progress monitoring measurement, and c) progress monitoring practices. The sample reviewed included 62 files that were identified to provide a representational sampling of placement, gender and race / ethnicity found in the overall population of students with autism in Special School District. The sample included files from 22 of the 23 partner districts and five SSD buildings.

On-site Observations

Observations were conducted in 30 classrooms in which there were more than three students with autism. The sample included 24 classrooms in 16 partner districts and five classrooms in SSD schools. One classroom in a purchase of service agency was observed, but because the personnel observed are not SSD employees, the ratings were not included in the reported results. Selected quality indicators in the areas of instructional methods and activities, instructional environments, and challenging behavior were observed during a 45-minute classroom visit. Prior to the observation, the observer interviewed the classroom teacher to seek his/her perception regarding strengths of the program, suggestions to improve the program, and additional supports that could be provided by the district. After the observation, teachers were asked if there was any other information that they wanted to share with the committee.

Committee members who participated in developing the quality indicators completed the majority of the observations. Prior to the observation, observers discussed how the rating scale would be applied. After the observations were completed, the observers discussed the ratings to ensure that ratings were consistent. Ratings for the challenging behavior indicators were eliminated from the analysis due to potential inconsistency in scoring among observers.

MAP Data

Results were reviewed for all students with autism in St. Louis County who took the Missouri Assessment Program over the last five years. The baseline year in which data were available was 2000. The committee reviewed the percentage of students taking the test at each grade level as well as the reported proficiency ratings and index scores.

Cost Analysis

Weekly IEP service minutes including related services were obtained for all IEP students by placement and primary disability. Using the FY05 budget expenses for instructional costs and indirect costs, a total annual cost for each placement was calculated. The annual cost was divided by number of students in each placement category as of December 1, 2004 to arrive at an estimated annual per pupil cost per placement.
CHAPTER V

RESULTS

Eleven sets of findings are presented in this chapter. These analyses have been included to answer the following questions posed by the Board of Education:

1. What are nationally recognized best practices for students with autism?
2. What patterns are noted when looking at the total population of students with autism?
3. What outcome data are available?
4. What are the costs associated with the various levels of service?
5. What are the strengths of the services offered to students with autism?
6. What are the recommendations for improvement of autism service delivery?

The sets of findings are listed below, along with the number corresponding to the evaluation focus question related to the finding.

1. An analysis of the available demographic data. (BOE question 2)
2. Quality indicators derived from the literature review. (BOE question 1)
3. The results of the teacher and administrator surveys of quality indicators and analysis of open-ended comments. (BOE questions 5, 6)
4. Results of parent survey and analysis of comments. (BOE questions 5, 6)
5. A comparison of parent survey results with staff survey results. (BOE question 5, 6)
6. The results of the public forum. (BOE questions 5, 6)
7. The results of the classroom observations. (BOE questions 5, 6)
8. A comparison of the on-site observations with staff perception on the same indicators. (BOE questions 5, 6)
9. An analysis of the IEP and progress monitoring results. (BOE question 3, 5, 6)
10. An analysis of MAP data (BOE questions 3, 5, 6)
11. A cost analysis for four placement categories. (BOE question 4)

Demographic Data

Figure 1 depicts the national, state, and district trends in autism diagnosis since the 1991-1992 school year on a semi-logarithmic scale. Nationally the educational diagnosis of autism spectrum disorder has increased from 15,580 in 1993 (the first year of mandatory reporting of the autism diagnosis) to 78,749 in 2001 an increase of 405%. During the same time period the Special School District’s number of students with autism increased 267%. National and district data are based on December 1st student counts. State data are based on State Profile Report November 2004.
Figure 1. National, State, and District Trends in Diagnosis

Number of Students

School Year
Figure 2 depicts the District trend in the autism population since the 1991-1992 school year. The number of students diagnosed with autism in Special School District has increased from 123 in the 1991-1992 school year to 1053 students in the 2004-2005 school year representing an increase of 756%.

Figure 3 depicts the percentage of students with autism in the various placement settings. Since the 2001 school year student placement has moved toward the less restrictive placement options with decreases in the percentage of students in a special education setting more than 60% of the day and in separate school placement.
Figure 4 depicts the percentage of students in the various placement settings for the Special School District (SSD) and the state of Missouri for the 2003-2004 school year (DESE Program Profile, November 2004). SSD data are based on December 1, 2003 Student Count. Data show that the percentage of students with autism in the SSD is higher for students in special education less than 21% of the day, lower for students in special education more than 21% of the day, and the percentage of students in separate facilities (public and private) is higher in the SSD.

Additional demographic information disaggregated by gender, grade and race/ethnicity can be found in Appendix 2.
Program Evaluation for Students with Autism

_Autism Quality Indicators_

The committee reviewed professional literature and developed the quality indicators of best practice. The indicators were used to serve as a basis for development of the staff and parent survey, classroom observation and review of areas addressed by IEPs.

**INSTRUCTIONAL METHODS AND ACTIVITIES:** The program provides a variety of developmentally and functionally appropriate activities, experiences, and materials that engage students in meaningful learning.

1. Instructional activities are tied to individualized motivators.
2. Instructional activities promote active engagement of the student.
3. Instructional activities are (whenever possible) embedded within ongoing and natural routines of home, school, vocational, and community settings.
4. Instructional activities utilize the Premack principle when appropriate.
5. Activities use a variety of instructional formats—one-to-one instruction, small group instruction, large group instruction, student-initiated interactions, teacher-directed interactions, play, peer-mediated instruction—based upon the skill to be taught and the individual needs of the student.
6. Instructional methods are adapted to the range of ages, abilities, and learning styles of students with autism.
7. Instructional methods emphasize the use of naturally occurring reinforcers.
8. Instructional methods facilitate the use of functional communication across instructional and social settings.
9. Instructional methods are consistent among implementers.
10. Students are taught to cope with the distractions and disruptions that are an inevitable part of daily living.
11. There is a plan showing methods for the maintenance and generalization of learned skills to new and different environments.
12. The program accesses the general education curriculum.
13. Student’s educational team meets on a consistent basis when:
   a) progress is not observed after an appropriate trial period.
   b) there is an unexpected change in a student’s behavior, health status, or environment.
14. Parents and professionals work collaboratively in planning transitions from one classroom, program, or service delivery system to another.
INSTRUCTIONAL ENVIRONMENTS: Educational environments provide a structure that builds on a student’s strengths while minimizing those factors that most interfere with learning.

15. Environments are free from unnecessarily distracting materials in order to help students recognize relevant information.
16. When needed (particularly for younger students), classrooms have defined areas that provide clear visual boundaries for specific activities.
17. Rules and routines are posted, referenced, and specifically taught.
18. Sensory supports are accessible.
19. Visual supports/schedules are consistently utilized.
20. Ratio of positive statements to negative statements is at least 4:1.

INCLUSION: Opportunities for interaction with nondisabled peers are incorporated into the program.

21. The program offers opportunities for interaction with nondisabled peers in both informal and planned interactions.
22. The program provides nondisabled peers with knowledge and support (e.g., peer training) to facilitate and encourage spontaneous and meaningful interactions.
23. Training and ongoing support are provided to the general education teachers and staff.

FAMILY INVOLVEMENT AND SUPPORT: Parents/Guardians are recognized and valued as full partners in the development and implementation of their children’s IEPs.

24. Parents/guardians and family members are supported as active participants in all aspects of their child’s ongoing evaluation and education to the extent of their interests, resources, and abilities.
25. Parents/guardians are informed about the range of educational and service options.
26. The program demonstrates an awareness and respect for the culture, language, values, and parenting styles of the families they serve.
27. The program makes parents/guardians aware of resources available through the Family Resource Center to assist them in understanding the needs of their child and support the family in behavior management.
28. Parents/guardians are provided with opportunities to meet regularly with other parents/guardians and professionals in support groups.
29. Parents/guardians receive regular communication from the program regarding their child’s progress.
30. Parents/guardians are assisted in accessing services from other agencies (when available and as appropriate) such as respite, in-home behavior support, home health care, transportation, etc.
CHALLENGING BEHAVIOR: Positive behavior supports are used to address challenging behavior.

31. The behavioral system defines expectations for appropriate behavior in all instructional settings.
32. A plan for crisis intervention is in place.
33. Staff is trained in recommended behavioral strategies.
34. Behavior Intervention Plans are evaluated and modified as needed.
35. Functional Behavioral Assessment (FBA) is used to direct intervention planning for persistent challenging behaviors.
36. Multiple methods (e.g., direct observations, functional analysis, rating scales, and interviews) are used in conducting the FBA.
37. The FBA identifies both immediate (e.g., request to perform a task) and more distant (e.g., poor sleeping habits) factors that increase challenging behaviors.
38. The FBA identifies one or more functions for the challenging behaviors.
39. Environmental accommodations and adaptations are used to prevent or minimize occurrences of the problem behavior.
40. Systematic direct instruction in alternative, appropriate skills (e.g., communication, social, or self-regulatory skills) is routinely incorporated into behavior intervention plans.
41. Behavioral intervention plans are based on positive supports and strategies and are routinely implemented.

PERSONNEL: Teachers, teacher aides and assistants, related service providers, school psychologists, administrators, and support staff are knowledgeable and skilled related to the education of students with autism.

42. Staff received autism specific training prior to working with students.
43. Paraeducators receive specific and direct instruction and supervision regarding their responsibilities to the student.
44. Ongoing support and technical assistance are available.
Staff Surveys

Surveys were returned by 307 of the 568 SSD teachers who were sent a survey, yielding a 54% return rate. Of those teachers returning the survey, the majority (53%) work in elementary settings, one fourth work in middle schools and one fourth work in high schools. There were responses from SSD teachers in 22 school districts, five SSD schools and one purchase of service agency. Half of the teachers that responded indicated that they have students with autism who are placed in special education less than 21% of the school day.

Surveys were returned from 38 of the 60 SSD coordinators and principals who were sent a survey yielding a 63% return rate. There were responses from administrators from 17 school districts and five SSD schools. Results can be found in Appendix 5-1.

There were 44 items on the staff survey. The ratings were based on a Likert scale, with a rating of 1 representing strongly disagree and a rating of 5 denoting strongly agree. Overall, the staff indicated that they agreed or strongly agreed that the majority of quality indicators are present in their programs. There were five areas of strength on the indicators for which scores were at or above a 4.5 average. The strengths are noted in Table 3.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities use a variety of instructional formats.</td>
<td>4.6</td>
</tr>
<tr>
<td>Instructional methods are adapted to the range of ages, abilities and learning styles of students.</td>
<td>4.5</td>
</tr>
<tr>
<td>Rules and routines are posted, referenced and taught.</td>
<td>4.5</td>
</tr>
<tr>
<td>Parents/guardians are informed about the range of service options.</td>
<td>4.5</td>
</tr>
<tr>
<td>Parents/guardians receive regular communication from the program regarding their child’s progress.</td>
<td>4.5</td>
</tr>
</tbody>
</table>

There were five indicators for which the average scores were still above average, but fell below 3.8. These areas are considered progressing. They are itemized in Table 4. There were no items below the average of 3.4.
Table 4. Progressing Areas on Staff Survey (mean between 3.4 – 3.8)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff received autism specific training prior to working with students.</td>
<td>3.4</td>
</tr>
<tr>
<td>Training and ongoing support are provided to the general education teachers and staff</td>
<td>3.7</td>
</tr>
<tr>
<td>There is a plan for showing methods for the maintenance and generalization of learned skills to new and different environments.</td>
<td>3.7</td>
</tr>
<tr>
<td>Environments are free from unnecessarily distracting materials in order to help students recognized relevant information.</td>
<td>3.7</td>
</tr>
<tr>
<td>Parents / guardians are provided opportunities to meet regularly with other parents / guardians and professionals in support groups.</td>
<td>3.7</td>
</tr>
</tbody>
</table>

The teacher surveys were analyzed to determine if there were differences among grade levels. For 33 of the 44 indicators (75%) there was agreement among how the staff rated the indicators. The elementary teachers rated 11 categories higher than the secondary teachers did. For eight categories in which there were significant differences, the results of all three grade levels were greater than 3.5, and therefore, will not be the subject of further investigation at this time. Specific results can be found in Appendix 5-2. For three of the eight categories, ratings from staff from secondary schools were at or below 3.5. These results are noted in Table 5. Two of the indicators were in the area of inclusion and one indicator was about personnel.

Table 5. Teacher Surveys: Comparison Across Grade Levels (mean between 3.4 – 3.8)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Elementary</th>
<th>Middle School</th>
<th>High School</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>The program provides nondisabled peers with knowledge and support (e.g., peer training) to facilitate and encourage spontaneous and meaningful interactions.</td>
<td>4.0</td>
<td>3.5</td>
<td>3.5</td>
<td>Elem&gt;Middle &amp; High *</td>
</tr>
<tr>
<td>Training and ongoing support are provided to the general education teachers and staff.</td>
<td>3.9</td>
<td>3.5</td>
<td>3.6</td>
<td>Elem&gt;Middle*</td>
</tr>
<tr>
<td>Paraeducators received specific and direct instruction and supervision regarding their responsibilities to the student.</td>
<td>4.0</td>
<td>3.4</td>
<td>3.7</td>
<td>Elem&gt;Middle*</td>
</tr>
</tbody>
</table>

*p <.05. There are statistically significant differences between groups.

There was one significant difference in the ratings between teachers and administrators. When asked if staff received autism specific training prior to working with students, the mean for the administrators was 3.9 compared to the mean of 3.3 for the teachers.

The survey contained a section in which the staff could write in any additional comments. Comments were included on 66 of the 307 surveys returned. The comments were placed into categories and tallied to determine common areas. The staff noted three main areas of commonality. Training was noted as an area of need for paraeducators, and
Program Evaluation for Students with Autism

general education teachers as well as ongoing training for special education teaching staff. Staff also reported a need for increased support and technical assistance specific to students with autism. Staff requested support and training that is accessible and specific to students on their caseloads.

Parent Surveys

Surveys were sent to all families with a child with an educational diagnosis of autism that included 1,039 parents / guardians who were on the district’s information database as of December 16, 2004. Surveys were returned from 310 families, yielding a 30% return rate. There were responses from families in 21 school districts, the SSD schools and private agencies. Sixty-five percent of the parents that responded indicated that their child receives special education less than 60% of the school day. The majority of surveys returned were from parents whose child is in elementary school (66%), while 20% were from parents of middle school students and 14% were from parents of high school students.

There were 22 items on the parent survey. The ratings were based on a Likert scale, with a rating of 1 representing strongly disagree and a rating of 5 denoting strongly agree. The mean rating for a combination of all the indicators was 4.0. There were no items for which the parents’ score was below 3.0. There were two items that were designed to measure parents overall satisfaction with services. Table 6 depicts the results.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel my child’s educational needs are being met.</td>
<td>4.0</td>
</tr>
<tr>
<td>I am satisfied with my child’s educational program.</td>
<td>4.0</td>
</tr>
</tbody>
</table>

There were five areas of strength from the parent surveys that were rated at or above a 4.3 average. Table 7 depicts the strengths.
Table 7. Strength Areas on Parent Survey (mean of 4.3 and above)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child’s special education teacher treats my child with respect.</td>
<td>4.6</td>
</tr>
<tr>
<td>My child’s special education teacher expects very good work from my child.</td>
<td>4.3</td>
</tr>
<tr>
<td>In IEP meetings and diagnostic conferences, I am treated as a respected member of the team.</td>
<td>4.5</td>
</tr>
<tr>
<td>My child’s right to confidentiality is observed at all times by the school staff.</td>
<td>4.3</td>
</tr>
<tr>
<td>The school offers opportunities for my child to interact with nondisabled peers.</td>
<td>4.3</td>
</tr>
</tbody>
</table>

There were five indicators for which the score was still above average (3.0), but fell below 3.7. These areas are considered progressing. Table 8 depicts the results. The lowest rated item (score 3.2) asked parents whether they had been assisted in accessing services from other agencies when available and as appropriate, such as respite, in-home behavior support, home health care, transportation, etc. Forty percent of the respondents answered N/A (not applicable/don’t know).

Table 8. Progressing Areas on Parent Survey (mean between 3.2 – 3.7)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child has made progress in written language skills over the last year.</td>
<td>3.6</td>
</tr>
<tr>
<td>I have been assisted in accessing services from other agencies (when available and as appropriate) such as respite, in-home behavior support, home health care, transportation, etc.</td>
<td>3.2*</td>
</tr>
<tr>
<td>The program provides nondisabled peers with the knowledge and support needed to facilitate and encourage meaningful interactions.</td>
<td>3.5</td>
</tr>
<tr>
<td>Environments are free from unnecessarily distracting materials in order to help students recognized relevant information.</td>
<td>3.7</td>
</tr>
<tr>
<td>Parents / guardians are provided opportunities to meet regularly with other parents / guardians and professionals in support groups.</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*40% of the parents rated this item as not applicable/don’t know.

The survey gave parent/guardians an opportunity to comment on any other information they wanted to share about their child’s progress. Comments were included on 153 of the 310 surveys returned. The comments were placed into categories and tallied to determine common areas. Table 9 depicts those areas for which at least 8 comments (10% of the 79 comments addressing areas of need) were provided.
Table 9. Parent Survey Comments – Recurring Themes

<table>
<thead>
<tr>
<th>Areas of Strength</th>
<th>No.</th>
<th>Areas of Need</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality, caring staff</td>
<td>(47)</td>
<td>Collaboration/Communication</td>
<td>(23)</td>
</tr>
<tr>
<td>Quality of the program in general</td>
<td>(27)</td>
<td>Training of staff</td>
<td>(17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social skills</td>
<td>(16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staffing</td>
<td>(11)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Programming for students performing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>at or near grade level</td>
<td>(8)</td>
</tr>
</tbody>
</table>

The parents requested an increase in communication between home and school and among service providers. Parents expressed the need for more training for all teachers. The need to address social skills was common. The parents reported that there should be increased opportunities for social interaction with nondisabled peers and that a program for social skills development should be considered. Parents were concerned that staff who are serving a full caseload of students may not have the time or training to provide the support needed to work with students with autism. Parents reported that all personnel need training to understand and work with students with autism who are performing at or near grade level.

**Comparison of Parent and Staff Survey Responses**

Staff ratings on four items were statistically higher than the parents, but the parents’ scores were above average (rating 3.8 and above) for each of these indicators. The results for each item are shown in Table 10.

Table 10. Comparison of Parent and Staff Survey Results, Above Average Scores

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Parents</th>
<th>Staff</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I receive regular communication from my child’s special education teacher</td>
<td>4.0</td>
<td>4.5</td>
<td>*</td>
</tr>
<tr>
<td>about how well my child is doing in school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have been made aware of resources available through the Family Resource</td>
<td>3.8</td>
<td>4.0</td>
<td>*</td>
</tr>
<tr>
<td>Center.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers understand and work effectively with my child’s sensory needs</td>
<td>4.0</td>
<td>4.3</td>
<td>*</td>
</tr>
<tr>
<td>Behavior intervention plans are based on positive supports and strategies</td>
<td>4.0</td>
<td>4.3</td>
<td>*</td>
</tr>
<tr>
<td>and are routinely implemented.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. There are statistically significant differences between groups.
In two areas, parents’ ratings were statistically significantly lower than the staff, and fell below 3.6. Table 11 depicts the results.

### Table 11. Comparison of Parent and Staff Survey Results, Progressing Scores

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Parents</th>
<th>Staff</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been assisted in accessing services from other agencies) when available and as appropriate) such as respite, in-home behavior support, home health care, transportation, etc.</td>
<td>3.2</td>
<td>4.0</td>
<td>*</td>
</tr>
<tr>
<td>The program provides nondisabled students with the knowledge and support needed to facilitate and encourage meaningful interactions.</td>
<td>3.5</td>
<td>3.8</td>
<td>*</td>
</tr>
</tbody>
</table>

*p < .05. There are statistically significant differences between groups.

### Public Forum

Seventy-five community members, many of whom were parents of students receiving services from SSD, participated in the public forum. Participants were asked to provide input regarding their perceptions of SSD’s implementation of the quality indicators, general comments of services to students with autism, and recommendations regarding additional areas to be investigated. The committee reviewed 261 individual comments from the participants. Table 12 depicts several themes that were frequently mentioned, representing at least 5% of the total comments. Appendix 5-5 lists the categories for all public forum comments.

### Table 12. Top Six Areas of Need Expressed by Public Forum Participants

<table>
<thead>
<tr>
<th>Community participants (N=75)</th>
<th>Number of comments</th>
<th>Percentage of total comments (N=261)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General education</td>
<td>29</td>
<td>11.1%</td>
</tr>
<tr>
<td>Sensory needs</td>
<td>26</td>
<td>10.0%</td>
</tr>
<tr>
<td>Social skills</td>
<td>21</td>
<td>8.4%</td>
</tr>
<tr>
<td>Inclusion with nondisabled peers</td>
<td>19</td>
<td>7.3%</td>
</tr>
<tr>
<td>Training of staff</td>
<td>17</td>
<td>6.5%</td>
</tr>
<tr>
<td>Communication</td>
<td>14</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

The participants indicated a need for the general education teachers to have autism-specific training. They expressed a concern that staff may not understand the full impact of the social skills deficits common to students with autism. They perceive the need for a framework for social skills development and expectations and a set of effective strategies that can be tailored to meet the very individualized needs of a student. This approach should incorporate available school supports. Expectations could include identification of a specific goal, direct instruction, facilitation, practice and generalization of the social skill. The participants recommended that peer training would be helpful in supporting students in the general education classroom. They perceive a need for an increased accessibility to sensory supports. The participants recognized a need for all staff working with a student with autism to be provided training. The parents participating in the forum expressed a need for communication about their child’s progress and available services.
Program Evaluation for Students with Autism

Classroom Observations

Twenty-nine classrooms were observed for a 45-minute instructional period. Observers rated eleven quality indicators using a 5-point rating scale. A description of the scale is summarized in Table 13.

Table 13. Classroom Observation Rating Scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not observed</td>
</tr>
<tr>
<td>2</td>
<td>Evidence of practice exists, but no implementation observed</td>
</tr>
<tr>
<td>3</td>
<td>Inconsistent implementation of practice</td>
</tr>
<tr>
<td>4</td>
<td>Consistently observed</td>
</tr>
<tr>
<td>5</td>
<td>Consistently observed across activities and implementers</td>
</tr>
</tbody>
</table>

Nine of the eleven indicators were rated above 3.5. There were four areas of strength on the indicators (above a 4.3 average). The strengths are noted in Table 14.

Table 14. Strength Areas on Classroom Observations (mean of 4.3 and above)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional activities promote active engagement of the student.</td>
<td>4.6</td>
</tr>
<tr>
<td>Activities use a variety of instructional formats</td>
<td>4.4</td>
</tr>
<tr>
<td>Instructional methods are adapted to the range of ages, abilities, and learning styles of students with autism.</td>
<td>4.3</td>
</tr>
<tr>
<td>Ratio of positive statements to negative statements is at least 4:1.</td>
<td>4.3</td>
</tr>
</tbody>
</table>
There were five indicators for which the average score was still above average, but fell below 3.7. These areas are considered progressing. They are itemized in Table 15. There were no items below 3.0.

Table 15. Progressing Areas on Classroom Observations (mean between 3.3 – 3.7)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rules and routines are posted, referenced, and specifically taught.</td>
<td>3.3</td>
</tr>
<tr>
<td>Sensory supports are accessible.</td>
<td>3.4</td>
</tr>
<tr>
<td>Visual supports/schedules are consistently utilized.</td>
<td>3.7</td>
</tr>
</tbody>
</table>

At the time of the classroom visit, the observers interviewed the teachers about strengths, additional supports needed and what could be done to improve services. Half of the teachers reported that the strength of the program was the low staff / student ratio that allows for individualized services. One third of the teachers identified strengths in the use of positive reinforcement and the expertise that is available by having a categorical autism classroom. Half of the teachers said that the district could support the program by providing additional instructional materials. Nineteen of the 29 staff reported that additional training was needed. Eleven staff indicated that collaboration with other teachers of autism as well as having sufficient time available to meet with general education staff would improve services. Some staff (13%) felt that placement options at the secondary level were more limited than those at elementary.

Comparison of Classroom Observations and Staff Surveys

Ratings on the direct classroom observations were compared with staff perception of the same indicators. Ratings on five of the eleven indicators were consistent between observers and staff perception as noted on the surveys. There were statistically significant differences between staff perception and observation ratings on four indicators, with staff rating higher than the observers reported. There was one indicator that was rated higher by the observers than reported by staff on the survey. Table 16 depicts those areas in which there was a difference between staff perception and direct observation.
Table 16. Differences Between Observations and Staff Survey

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Observation</th>
<th>Survey</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional activities utilize the Premack principle when appropriate.</td>
<td>3.9</td>
<td>4.4</td>
<td>*</td>
</tr>
<tr>
<td>Rules and routines are posted, referenced, and specifically taught.</td>
<td>3.3</td>
<td>4.5</td>
<td>*</td>
</tr>
<tr>
<td>Sensory supports are accessible</td>
<td>3.4</td>
<td>4.5</td>
<td>*</td>
</tr>
<tr>
<td>Visual supports / schedules are consistently utilized.</td>
<td>3.7</td>
<td>4.5</td>
<td>*</td>
</tr>
<tr>
<td>Environments are free from unnecessarily distracting materials in order</td>
<td>4.3</td>
<td>3.8</td>
<td>*</td>
</tr>
<tr>
<td>to help students recognize relevant information.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. There are statistically significant differences between groups.

Of the 29 SSD classrooms observed, 21 were classrooms for students with autism in partner district (general education) schools, 3 were cross-categorical classrooms in partner district (general education) schools, and 5 were classrooms in SSD buildings. The averages for the three different types of classroom were compared. There was no significant difference in the total observation rating for classrooms in SSD buildings (4.2) and the autism classrooms in the partner districts (4.1).

The average for the cross-categorical classrooms was lower, with a mean of 3.0. The biggest differences in the cross-categorical classrooms when compared with the autism classrooms in the partner districts were noted in utilizing the Premack principle, consistently utilizing visual supports, having sensory supports accessible and having rules / routines posted and specifically taught. Specific results that reflect differences are listed in Table 17. Only three cross-categorical classrooms were observed, therefore, no reliable conclusion could be drawn from this limited sample. Further investigation may be warranted to determine whether these indicators of quality programming for students with autism are consistently applied across cross-categorical classrooms.

Table 17. Significant Differences in Partner District Autism and Cross-Categorical Classroom Observations

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Autism Classroom</th>
<th>Cross-Categorical</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional activities utilize the Premack principle when appropriate.</td>
<td>4.2</td>
<td>2.0</td>
<td>*</td>
</tr>
<tr>
<td>Rules and routines are posted, referenced, and specifically taught.</td>
<td>3.4</td>
<td>1.7</td>
<td>*</td>
</tr>
<tr>
<td>Sensory supports are accessible</td>
<td>3.7</td>
<td>2.3</td>
<td>*</td>
</tr>
<tr>
<td>Visual supports / schedules are consistently utilized.</td>
<td>3.8</td>
<td>1.7</td>
<td>*</td>
</tr>
</tbody>
</table>

*p < .05. There are statistically significant differences between groups.

Record Review: IEP and Progress Monitoring

The committee reviewed 62 files representing each of the four geographic regions, 21 partner districts and the five SSD schools serving special education students. The sample was representative of the total population of students with autism for gender, race / ethnicity and age. Files from four different placements were reviewed, from the least restrictive placement (<21% of time in special education) to the most restrictive
placement (separate public school) within SSD. Files from one purchase of service agency were reviewed, but not tallied in the count of 62 since SSD staff were not responsible for documenting the progress monitoring material. The committee conducted a qualitative analysis of the data collected during the file review.

Data are reported in six different areas: 1) description of supports provided, 2) IEP goal areas, 3) IEP goal statements, 4) progress monitoring process, 5) progress monitoring practices and 6) progress on IEP goals.

Description of Supports Provided

Three areas of specialized supports were reviewed: a) assistive technology, b) Applies Behavior Analysis (ABA) services and c) special education support in general education. Of the 62 IEPs reviewed, 14% addressed supports in the area of assistive technology. Thirteen percent of the files reviewed listed specialized services through ABA. Special education support in the general education classroom was noted for 39 students, which is 71% of the files reviewed for students served in partner districts. Of the 39 students, 19 were provided support in general education through collaborative teaching classes. Twenty students received support from a special education paraeducator in the general education setting.

IEP Goal Areas

The IEPs were reviewed to determine the areas most often developed for students with autism. The results are noted in Table 18.
Table 18. IEP Goal Areas

<table>
<thead>
<tr>
<th>IEP Goal</th>
<th>Percent of students with IEP goal addressing area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication, Language</td>
<td>77%</td>
</tr>
<tr>
<td>Social Skills</td>
<td>61%</td>
</tr>
<tr>
<td>Behavior</td>
<td>48%</td>
</tr>
<tr>
<td>Written Language / Pre-writing</td>
<td>48%</td>
</tr>
<tr>
<td>Reading</td>
<td>44%</td>
</tr>
<tr>
<td>Math</td>
<td>32%</td>
</tr>
<tr>
<td>Motor Development</td>
<td>27%</td>
</tr>
<tr>
<td>Communication, Speech</td>
<td>21%</td>
</tr>
</tbody>
</table>

IEP Goal Statements

The IEPs were reviewed and criteria were applied to determine whether the IEP met the standards specified in the IEP review protocol (Appendix 4.4). The first rating addressed the student skill focus of the goal. The standard required that the goal specify improvement in the student’s skills. The goal was rated as not meeting the standard if the goal focused on school survival or was a statement about the adult’s behavior or adult’s service. Results demonstrate that this is an area of strength. The second rating assessed whether the IEP goal was measurable. The standard required that the goal state the behavior, conditions (situation and measurement material) and criterion. The results indicate that this area is adequate, but could be improved. The results of the review are itemized in Table 19.

Table 19. IEP Goal Statements: Percentage of Goals Meeting Standard

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student skill focus of the IEP goal</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>Measurable goal</td>
<td>70%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Progress Monitoring Process

There were three areas addressed for the progress monitoring process. The first item reviewed was measurement of progress on IEP goals. The goal was rated as meeting the standard if the student’s progress was monitored with an identifiable procedure. This standard was an area for improvement. Only 44% of the goals reviewed met the standard.

The next item measured the format of the progress monitoring material. The type of progress monitoring material was noted. The standard required clear evidence of the use of a quantitative monitoring of student progress. This item was an area for improvement, with 40% of the goals measured using graphs, tables or percentages of accuracy. Raw data was provided for 18% of the goals, but there was no indication of a compilation of data to measure overall progress. Anecdotal notes were provided for 20% of the goals and there was no monitoring available for 19% of the goals.

The third area in the progress monitoring process measured the alignment between IEP goals and progress monitoring material. The standard required consistency between
the method used to calculate student progress and the measurement concept stated in the IEP goal. This was an area for improvement; 61% of the goals reviewed were misaligned or no monitoring material was available. Results for the three standards are summarized in Table 20.

Table 20. Progress Monitoring - Process Results

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No monitoring material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Measurement of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>progress on IEP goals</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>44%</td>
<td>56%</td>
<td></td>
</tr>
<tr>
<td>2. Format of progress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>monitoring material</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2%</td>
<td>4%</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>18%</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>3. Alignment between</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEP goal and</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>progress monitoring</td>
<td></td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Progress Monitoring Practices

There were three areas addressed for progress monitoring practices. The first item reviewed was baseline. The goal was rated as meeting the standard if the data were gathered prior to implementing the instruction. Collection of baseline data was an area for improvement, as 4% of the data reviewed met the standard.

The next item measured the rate of multiple data points. The standard required the presence of frequent measures of performance to make an informed judgment about responsiveness to the instruction. Use of multiple data points was an area for improvement, with 9% of IEP goals being measured 1-4 times a year, while 38% of the IEPs had data for which the frequency was unable to be determined or no data was available.
The third area in progress monitoring practices addressed the documentation of phase changes. The standard required that adjustments in instruction (phase changes) were represented on the progress monitoring material. The use of phase changes was an area for improvement. For 58% of the goals reviewed, phase changes were not shown on a graph or reflected in narrative form. Results for the three standards are summarized in Table 21.

Table 21. Progress Monitoring - Practices Results

<table>
<thead>
<tr>
<th>1. Baseline</th>
<th>Yes-quantitative</th>
<th>No-descriptive or not reported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4%</td>
<td>96%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Rate of multiple data points</th>
<th>3-4 times per month</th>
<th>2 times per month</th>
<th>1 time per month</th>
<th>1-4 times a year</th>
<th>Unable to determine / No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>4%</td>
<td>34%</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>3. Phase changes</td>
<td>Yes</td>
<td>Not in material</td>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>58%</td>
<td>37%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Progress on IEP Goals

Data were collected regarding student progress on IEP goals. Of the goals for which progress reports were available, 51% were noted as met. Forty-two percent of the goals were rated, “making sufficient progress,” while 7% of the goals were not met. While it appears that sufficient progress was being made on 93% of the goals, only 39% of the progress monitoring was aligned to the IEP goal, and 39% had anecdotal data or no information. The data were not available to verify the level for which progress was judged sufficient. In light of the absence of quantifiable data, the descriptor “making sufficient progress” provided little guidance regarding student performance. Table 22 shows the results for the progress on IEP goal areas.

Table 22. Progress on IEP Goals

<table>
<thead>
<tr>
<th>Met</th>
<th>Making sufficient progress</th>
<th>Not met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Goals</td>
<td>123</td>
<td>100</td>
</tr>
<tr>
<td>Percentage of Goals</td>
<td>51%</td>
<td>42%</td>
</tr>
</tbody>
</table>
MAP Data

Communication Arts

The percentage of students scoring in Step 1 has decreased each year from 2000 to 2004 in 3rd and 7th grades. The percentage of students scoring in the nearing proficiency category increased from 2001 to 2004 in grades 3 and 7. Figures 5-7 depict the results for the 3rd, 7th, and 11th grade Communication Arts test.

Figure 5. Communication Arts, Gr. 3

St. Louis County & SSD Elem Level %

Figure 6. Communication Arts, Gr. 7

St. Louis County & SSD Mid Level %

Figure 7.
As students are expected to read and interpret content information at the middle and high school levels, the ratio of students in the proficient and nearing proficient categories drops. This finding is also supported by anecdotal information reported by the teachers. The students who can read fluently at higher levels may not be able answer the inferential questions typically posed at the upper grades.
Mathematics

As noted in Figures 8-10, the percentage of 4th grade students scoring in Step 1 has decreased from 2000 to 2004. Performance on the MAP assessment tends to go up and down year to year. There are no consistent performance trends visible in the Mathematics assessment data.

Figure 8. Mathematics, Gr. 4

<table>
<thead>
<tr>
<th>St. Louis County &amp; SSD Elem Level %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
</tr>
<tr>
<td>60%</td>
</tr>
</tbody>
</table>

Figure 9. Mathematics, Gr. 8

<table>
<thead>
<tr>
<th>St. Louis County &amp; SSD Mid Level %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
</tr>
<tr>
<td>70%</td>
</tr>
</tbody>
</table>

Figure 10. Mathematics, Gr. 10
Comparison of SSD and students across the state

Data disaggregated by disability were not available to allow for comparison of the progress of students with autism in St. Louis County with those across the entire state. Information for all students with IEPs was available. Figures 11 and 12 show a comparison of the scores of all students with IEPs in the state to those with autism in SSD.

Figure 11. MAP Communication Arts, 2004
Overall Trends

In 2004, 70% of the eligible population took the 3rd grade Communication Arts test, 56% of the eligible 7th grade students and 36% of the 11th grade students took the MAP test (Figure 13). In Mathematics, 63% of the eligible 4th grade students took the 4th grade test, 67% of the eligible 8th graders, and of 46% of the eligible 10th graders took the test. The trend of fewer students taking the test at the high school level may be a reflection of the level of skill and knowledge required at the secondary level.
As noted in Table 23, the percent of level not determined for grades 3 and 11 has consistently decreased, as the number of students with autism who take the Communication Arts standardized assessment has grown over the last four years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gr. 3</th>
<th></th>
<th></th>
<th>Gr. 7</th>
<th></th>
<th></th>
<th>Gr. 11</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students</td>
<td>LND #</td>
<td>LND %</td>
<td>Students</td>
<td>LND #</td>
<td>LND %</td>
<td>Students</td>
<td>LND #</td>
<td>LND %</td>
</tr>
<tr>
<td>2000</td>
<td>22</td>
<td>2</td>
<td>8.30%</td>
<td>11</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>2001</td>
<td>20</td>
<td>4</td>
<td>16.60%</td>
<td>9</td>
<td>1</td>
<td>10%</td>
<td>2</td>
<td>1</td>
<td>33.30%</td>
</tr>
<tr>
<td>2002</td>
<td>43</td>
<td>4</td>
<td>8.50%</td>
<td>13</td>
<td>2</td>
<td>13.30%</td>
<td>7</td>
<td>1</td>
<td>12.50%</td>
</tr>
<tr>
<td>2003</td>
<td>48</td>
<td>3</td>
<td>5.80%</td>
<td>23</td>
<td>5</td>
<td>17.80%</td>
<td>11</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2004</td>
<td>73</td>
<td>3</td>
<td>3.90%</td>
<td>45</td>
<td>6</td>
<td>11.70%</td>
<td>18</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

As depicted in Table 24, index scores for reading and math show a general trend upward since the baseline year. The scores for the secondary students in both Math and Communication Arts are variable from year to year. It is difficult to judge whether patterns can be drawn from cohort groups because of the variation in the groups over the four-year period between assessments. For example, there is only one group of students who took the 3rd grade Communication Arts assessment in 2000 and took it again as 7th grade students in 2004. Twenty-two students took the test in 2000, while 45 students took the test in 2004. The 2000 MAP index score for the students at 3rd grade was 154.4. The index score at the 7th grade level was 155.5. Since the group doubled in size, comparison between the groups as a cohort may not be reliable.

<table>
<thead>
<tr>
<th>Table 24. MAP Index Profiles: Communication Arts &amp; Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elementary</strong></td>
</tr>
<tr>
<td>Communication Arts, Grade 3</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>Mathematics, Grade 4</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td><strong>Middle</strong></td>
</tr>
<tr>
<td>Communication Arts, Grade 7</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>Mathematics, Grade 8</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td><strong>High School</strong></td>
</tr>
<tr>
<td>Communication Arts, Grade 11</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>Mathematics, Grade 10</td>
</tr>
<tr>
<td>2000</td>
</tr>
<tr>
<td>2001</td>
</tr>
</tbody>
</table>
Cost Analysis

Cost Foundation
To analyze the costs associated with programming for students with autism, the following activities were completed:

1. The weekly IEP service minutes for all students in all disability categories including related services were obtained. These minutes were itemized by the Least Restrictive Environment (LRE) placement codes and by primary disability.
2. The weekly service minutes were multiplied by 36 weeks to convert to an annualized amount.
3. The fiscal year 2005 tuition calculation was used to obtain the budgeted expenses and includes both direct instructional and indirect costs.
4. Administrators were polled to determine approximately 92 students at the resource level have fulltime paraeducator support to facilitate inclusion in general education. Using the average cost for a paraprofessional of $25,569, the total cost in the resource category was reduced by $2,352,348.
5. The annual expenses were divided by the annual service minutes in each category to arrive at a district-wide per minute cost.

The annualized service minutes for the autism program, totaling 34,993,269 were itemized by LRE placements and multiplied times the districtwide per minute cost to reflect an estimated annual cost for the autism program. Each LRE category was divided by the December 1 2004 count to arrive at an estimated per pupil per year cost excluding extended school year (ESY) programming (Table 25).

Summary
The figures used to calculate the estimated annual cost per student for all service delivery models can be found in Table 25. The estimated yearly special education cost (FY 05) for educating a student with autism in SSD was calculated at $18,613. The Special Education Expenditure Project (Chambers, Shkolnik & Perez, 2003) reported a cost of $15,219 per child expenditure for the year 1999-2000. When a 3.0% yearly cost increase was applied to the 1999-00 base, the average national cost estimate for FY05 was $17,643 (Table 26). This can be compared to the district’s FY 05 estimated cost, which is approximately 5.5% higher than the extrapolated national standard.

The most costly service was for students in purchase of service ($41,503), followed by public separate school ($34,760), then by students in self-contained classrooms in partner districts ($28,507) and finally by students who spend less than 60% of their day in a special education setting ($8,162). According to a poll of administrators, 92 students who are included in general education classes have fulltime paraeducator support. When the cost of the paraeducator is included, the resulting estimated annual per pupil cost is $33,731. The teachers of classrooms in partner districts indicated that students who were included for a portion of the day in general education classes were, in many cases, accompanied by a staff person. The same students may not require one-to-one support while in the structured atmosphere of the special education setting. Since it is best practice to provide opportunities to interact with nondisabled peers, inclusion of students is a high priority. It is surmised that the need for additional paraeducators to facilitate inclusion in the general education classroom impacts the cost of services at that level. In summary, individual student needs may account for the variations in educational expenditures for students with autism better than disability category alone.
The Purchase of Service cost represents an average cost for a student for a school year at Giant Steps, which is the only categorical POS agency that serves students with autism. While the other agencies may provide services for students with autism, they do not exclusively service students with autism. The cost of services to students in SSD buildings ($34,760 annually, excluding ESY) compares favorably to the average cost of the services provided at the purchase of service agency ($41,503 annually, excluding ESY).

<table>
<thead>
<tr>
<th>Placement Codes</th>
<th>Placement Descriptions</th>
<th>Expenses</th>
<th>No. of students Dec 1, 2004</th>
<th>Annual Per Pupil Cost per Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100 &amp; 1201</td>
<td>Up to 21% &amp; 21-60%</td>
<td>5,248,471</td>
<td>643</td>
<td>8,162</td>
</tr>
<tr>
<td>100 &amp; 1201</td>
<td>&lt;60% with fulltime paraeducator</td>
<td>2,352,348</td>
<td>*</td>
<td>33,731</td>
</tr>
<tr>
<td>1301</td>
<td>60%+</td>
<td>6,955,626</td>
<td>244</td>
<td>28,507</td>
</tr>
<tr>
<td>1403</td>
<td>Public Facility 50%+</td>
<td>4,205,914</td>
<td>121</td>
<td>34,760</td>
</tr>
<tr>
<td>AVERAGE COST FOR AUTISM SERVICES ACROSS SSD PLACEMENTS</td>
<td></td>
<td>18,762,359</td>
<td>1008</td>
<td>18,613</td>
</tr>
<tr>
<td>AVERAGE COST FOR AUTISM PURCHASE OF SERVICE PLACEMENT</td>
<td></td>
<td></td>
<td></td>
<td>41,503</td>
</tr>
</tbody>
</table>

*Approximately 92 students receiving <60% of their time in special education have full-time paraeducator support

<table>
<thead>
<tr>
<th>School Year</th>
<th>1999-00</th>
<th>2000-01</th>
<th>2001-02</th>
<th>2002-03</th>
<th>2003-04</th>
<th>2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Special Education Cost</td>
<td>15,219</td>
<td>15,675</td>
<td>16,145</td>
<td>16,630</td>
<td>17,129</td>
<td>17,643</td>
</tr>
<tr>
<td>Annual Total Cost (General &amp; Special)</td>
<td>18,790</td>
<td>19,354</td>
<td>19,934</td>
<td>20,532</td>
<td>21,148</td>
<td>21,783</td>
</tr>
</tbody>
</table>
CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Summary

The committee members met to review, assimilate, and analyze the program evaluation data. The costs associated with various service delivery options were reviewed, but it was determined that individual student needs may account for the variations in educational expenditures for students with autism better than disability category alone. Through discussion and questioning, the committee identified areas of strength and weakness that were noted across multiple data sources.

Strengths

Several areas of strength were identified. Parents commonly noted that the teaching staff is of high caliber. Parents indicated that the special education teachers treat their children with respect and expect very good work from them. Parents also reported that they are treated as a respected member of the team. Parental survey results and comments indicated that parents feel that their children’s needs are being met and that they are satisfied with their children’s education.

Instructional strengths were noted in the adaptation of instructional methods based upon the range of abilities and learning styles of students and in the use of a variety of instructional formats, as reported by staff and documented by classroom observations. The observations also revealed strengths in the use of positive to negative statements and the use of instructional formats that support active engagement of students.

Seventy percent of the IEP goals were written in a measurable manner. Performance on state assessments shows a trend towards more students being given the opportunity to take the MAP test.

Weaknesses

The evaluation identified seven main areas of challenge.

Training and technical support

Both staff and parents noted ongoing support and training as an area of need for paraeducators, general education teachers and special education teachers. Staff also reported a need for increased support and technical assistance specific to students with autism. Staff requested support and training that is accessible and specific to students on their caseloads.

Progress monitoring

The IEP review identified weaknesses in progress monitoring process and practices: a) measurement of progress on the IEP goals, b) use of a quantitative monitoring of student progress, c) alignment between IEP goals and progress monitoring material, d) baseline data, e) frequent measures of performance to make an informed judgment about responsiveness to instruction, and f) documentation of adjustments in instruction.
Program Evaluation for Students with Autism

Students functioning at or near grade level
Parents reported that all personnel need training to understand and work with students who perform at or near grade level. In addition, demographic analyses revealed that 34% of students spend less than 21% of their day in special education settings. With one third of the students receiving the majority of their education in the general education classroom, further information is needed to determine the degree to which additional supports are necessary.

Secondary students
Statistically significant differences among grade levels were noted for eleven quality indicators. For these indicators, the ratings for elementary teachers were higher than secondary teachers. Placement data indicated that a higher percentage of secondary students receive services in separate schools. In addition, analysis of demographic trends indicated an anticipated growth in the number of secondary students with autism over the next several years. Based upon these data sources, further study regarding the effectiveness of services at the middle and high school levels is warranted.

Social skills
Parents expressed a concern that staff may not understand the full impact of the social skills deficits common to students with autism. They perceive the need for a framework for social skills development and expectations and a set of effective strategies that can be tailored to meet the very individualized needs of a student. Available peer-reviewed literature also supports the need for structured social interactions. Both parents and teachers stated that peer training would be helpful in supporting students in the general education classroom and facilitating peer interactions.
**Sensory supports**

Accessibility to sensory supports was noted as an area for improvement based on classroom observations. During the parent forum, parents also expressed a need for an increased accessibility to sensory supports. Use of visual supports and schedules was a progressing area for the classroom observations.

**Effective communication with parents**

Parents requested an increase in communication between home and school through survey comments and during the public forum. The teachers rated regular communication with parents much higher than did parents. Accessing services from other agencies was noted as an area of need according to survey results. In contrast, the majority of the teachers perceived that they agreed or strongly agreed that parents had assistance to accessing these services.

**Limitations**

The data collected for this evaluation provided the committee with a significant amount of information that had not previously been reviewed as a whole to lead towards systemic improvement. However, in the process of data analysis, the committee noted several limitations that may have affected the reported results. These limitations should be taken into consideration when interpreting the results and designing future program evaluation activities.

1. Because of logistical concerns, direct classroom observations were not attempted in the general education setting or of students in special education less than 60% of the time.

2. Student input was not included.

3. Sufficient information to make specific recommendations about services for students at the secondary level and for students performing at or near grade level was not collected.

4. Input from general educators was not collected regarding their perception of supports and services specific to autism.

5. Quality indicators did not explicitly address social skills.

**Recommendations**

The recommendations address identified needs in the areas of training and technical support, progress monitoring, student support, social skills, sensory supports and parent communication. Action plans have been developed to address the recommendations and align with the district’s rolling plan objectives.

1. Develop a model for training and on-going support that is sufficient to meet the needs of the growing population of students with autism. Considerations should
include general educators, special educators and paraeducators, and non-disabled peers.

2. Implement consistent and meaningful progress monitoring data collection to guide instruction and provide feedback to parents. Consideration should be given to professional standards for progress monitoring processes and practices, and implementation of data-based decision-making.

3. Gather additional data regarding supports for students with autism performing at or near grade level and services provided at middle and high school levels.

4. Provide effective instructional resources to improve students’ social competencies.

5. Investigate the use and impact of sensory supports.

6. Develop a set of recommendations to foster effective communication between parents and staff. Consideration should be given to awareness of available district and/or community resources, reporting of skill development and school performance.
REFERENCES


DESE website: http://www.dese.state.mo.us/divspced.


APPENDIX