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A CASE STUDY OF A CHILD PRESENTING
ACADEMIC AND ON TASK DIFFICULTIES

An Abstract of a Thesis
Submitted
In Partial Fulfillment
Of the Requirements for the Degree
Educational Specialist

Eric Stephen Weichers
University of Northern Iowa
December 2002

ABSTRACT

The current study examines a 4th grade, African-American male referred for special education eligibility evaluation. Specific academic difficulties cited on the referral included reading, writing, spelling, and math. A behavioral concern included the student's off task behavior and how it might contribute to his academic difficulties. A special education evaluation was conducted that included the procedures of reviewing the student's records, interviewing those of consequence to the evaluation, classroom observations of the student's behavior, and testing of skills. The testing procedures included nationally normed standardized tests, curriculum based assessment, permanent product review, informal reading inventory scores, and an intelligence test. Reviews are provided for each assessment used. The evaluation sequence is provided, as well as educational decisions and their rationale. Both academic and behavioral interventions were conducted in the study. Their rationale, as well as progress monitoring data, are included. A review of the results of the study, conclusions drawn from this process, implications for the student's future, and the need for further research are also provided.

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A Thesis

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Educational Specialist

Eric Stephen Weichers

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This Study by: Eric Stephen Weichers

Entitled: A Case Study of a Child Presenting
Academic and On Task Difficulties

Has been approved as meeting the thesis requirement for the
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CHAPTER 1

INTRODUCTION

Sam (the fictitious name for the actual child used in the study) is a good student. He is courteous and respectful and is a hard worker. Yet he seems to have always struggled with his academics, especially reading, writing, and math. His behavior, whereas not distracting to other students, seems to be distracting his learning. Now in 4th grade, he is considerably lagging behind his classmates in his academic skill level. He just doesn't seem to be picking up the skills like the other students and the teacher is not quite sure why. What can be done? Is there a way to examine Sam's education and come to a conclusion as to what may improve his skills?

When a student is struggling in school, there are many complex features, which may be contributing, including the educational context and the student's behavior or individual skill weaknesses. When students begin to fall behind their peers, the educational system provides specialized education with the hypothesis that individual attention to specific skill needs will help the student learn more effectively and efficiently. A student who may be eligible for special education goes through an evaluation which focuses on their attained skills and skills still in need of development. This evaluation approximates an in-depth examination of all of the variables which may be causing the decline in academic functioning. Of course, with the limited resources available to educators, this in-depth analysis is often approximated and not always

comprehensive. In this particular study, a 4th grade male who was struggling in several academic areas was evaluated for special education. The researcher used this opportunity to take an even more comprehensive, holistic look at the student and the educational context surrounding him in order to provide a more appropriate education.

The special education evaluation is a subjective process which attempts to use both quantitative and qualitative data in order to support or refute the child's need for special education services. Many variables affect the evaluation process, such as the types of instruments used, the evaluation criteria, and the evaluating team. Variability between each school's evaluation processes is also a factor which provides inconsistencies in the special education process. Evaluation is a process in need of constant critiquing and revision. Looking closely and comprehensively at the evaluation process may provide information to the evaluation team on how to make the evaluation stronger, more efficient and more accurate.

Purpose of Study

The purpose of this study was to examine a particular student's educational context and to define strengths and weaknesses in academic areas in order to make sound educational decisions concerning his future under the context of a special education evaluation. This included an in-depth review of the educational context in which he learns and an evaluation of his skills in order to provide him with a more individualized educational plan.

Case Study Format

This study will be conducted in a case study format. Case studies, especially qualitative case studies, are prevalent throughout the field of education. Because an education is such a complex and dynamic phenomenon, describing a single subject's education can be an informative and revealing process.

There has been much confusion surrounding what a case study is and how the process is to be conducted. Yin (1994) described a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not clearly evident” (p. 13). Miles and Huberman (1994) add to this definition by thinking of the case as “a phenomenon of some sort occurring in a bounded context” (p. 25). Defining a case study by the process involved, Wilson (1979) defines a case study as a process “which tries to describe and analyze some entity in qualitative, complex, and comprehensive terms not infrequently as it unfolds over time” (p. 448). For the purpose of this study, a case study is defined as the describing and analyzing of a single student and his academic abilities in the context of the classroom in order to identify undeveloped skills and apply appropriate interventions to help build the skills necessary to be successful in school.

Its special features can further define the case study. Case studies can be characterized as being particularistic, descriptive, and heuristic (Merriam, 2001). Particularistic means that case studies focus on a particular situation, event, program or

phenomenon. Descriptive means that the end product of a case study is a rich, “thick” description of the phenomenon under study. Heuristic means that a case study illuminates the reader’s understanding of the phenomenon under study. When these three characteristics are combined, a case study provides an in-depth description of a single phenomenon which allows the reader a greater understanding of that particular phenomenon.

Case studies, like any other type of research, have both strengths and limitations. One strength of a case study is that it offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon (Merriam, 2001). It also provides for a rich and holistic account of the phenomenon, which allows for a greater understanding of the phenomenon and the context which surrounds the phenomenon. The results of a case study may be the impetus for further research on one aspect of the phenomenon. It has also been shown to be a particularly useful instrument for studying educational innovations, evaluating programs, and for informing policy (Merriam, 2001).

Case studies also have several limitations. Case studies are often time consuming. In order to gather the information necessary for a rich description, the researcher must have an ample amount of time which is not always available. Many case studies are so descriptive that they are not practical for educators or policy makers to read because of their length. Reliability, validity and generalization of findings are also limitations with

the case study process because of their qualitative nature (Merriam, 2001). The biggest limitation involves the researcher. The researcher's insights and analysis of the context color the entire study. Untrained or unethical researchers could produce a case study which is inaccurate and unreliable, yet would be undetectable by the reader. The researcher must take responsibility to be a most unbiased observer and reporter as possible in order for the case study to be an adequate research instrument.

Definition of Terms

Attention Deficit Disorder: A diagnostic disorder in which the person has a difficult time concentrating on a given task for an extended period of time.

Case Study: As defined for this study, a case study is the describing and analyzing of a single student and his academic abilities in the context of the classroom in order to identify undeveloped skills and apply appropriate interventions to help build skills necessary to be successful in school.

Curriculum Based Assessment or CBA: A systematic set of procedures that produces a data base for making education decisions derived from assessments which are based on the classroom curriculum (Deno, 1989).

Eligible Individual: An individual with a disability who is handicapped in obtaining an education and therefore is entitled to special education services under IDEA (I.A.C.§281-41.5).

Entitled Individual: An entitlement to special education system used by Iowa. In this system a student is not labeled specifically by their disability, such as learning disabled or behavior disordered, rather all students who are entitled to special education services are labeled as entitled individuals (EI). EI status is thought to reduce the stigmatism of degrading labels such as MD, BD, and LD.

General Education: Any type of instruction that occurs in the regular education classroom. As opposed to the individualized nature of special education, general education instruction is based on the curriculum and is taught to all students in the same manner.

IDEA or Individuals with Disabilities Education Act (P.L. 94-112): Laws which were enacted in order to guide and monitor the specialized education and treatment of students with disabilities (Yell, 1998).

IEP or Individualized Education Program: The written record of an eligible individual's special education instruction and related services which will be provided by the school (I.A.C.§281-41.5).

Learning Disabled: A disorder in one or more of the basic psychological processes involved in understanding or in using spoken language, spoken or written that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, which are not a result of mental or physical disabilities,

behavior problems or environmental, cultural, or economic disadvantage (I.A.C.§281-41.5).

Phonics: The understanding that there is a predictable relationship between phonemes (the sounds of spoken language) and graphemes (the letters and spellings that represent those sounds in written language).

Pullout Instruction: Instruction that is provided in an individual or small group setting outside of the general education classroom.

Sight Words: Words that appear very often in almost any reading that children should know how to read automatically simply by seeing them (Dolch, 1936).

Special Education Services: Specially designed instruction to meet the unique needs of an eligible individual provided by the school the student attends (I.A.C.§281-41.5).

Systematic Behavioral Observation: An observation system that involves first-hand, direct observation of the student and allows for assessment of environmental contingencies that produce behavior. This system pays careful attention to defining the target behavior, the setting and the conditions of data collection (Kamphaus & Frick, 1996).

Organization

The author is presenting the case study within an ecological context that allows relevant literature to be presented within the development of the case itself rather than as a pre-set body of knowledge presented prior to the statement of the research

methodology. The thesis, then, starts with the overview, purpose, and definitions of terms in Chapter 1. Chapter 2 presents the case and the supportive literature in a combined format followed by a representation, in summary form, in a timeline format that tracks the sequence of the study. Chapter 3 discusses the conclusions in the case, relates the process to what was learned that benefited the actual child being studied, discussions of the next steps needed for effective monitoring of the case by the next clinician, and implications for future research.

CHAPTER 2

DEMOGRAPHICS AND GENERAL ASSESSMENT ISSUES

Sam is a nine year-old African American male attending an elementary school in Iowa. He is currently in the 4th grade. He was referred to the problem solving team for poor reading skills, poor writing skills, poor math skills and possible attention deficit problems. His behavioral issues and how they were affecting academics and learning were also a primary concern identified by the general education teacher. Sam has not received special education services in the past but has been through problem solving on one occasion. This resulted in several accommodations, such as moving him closer to the front of the class and shortened spelling lists, however they were not successful enough to prevent him from being referred for special education evaluation.

Ecology/Environment

Sam attends a small K-12 school. In Sam's school system there were a total of 529 students who attended as of Fall 2001. Of this total, 284 were male while 245 were female. Minorities made up 24% of the school population. Seventy-eight of the total number of students were African-American (15%), 37 were Asian-American (7%), and 13 were Hispanic-American (<1%). Thirty-five students were entitled to special education services and four have 504 plans, equaling almost 7% of the total school population. Almost 10% of minority students were entitled, while 5% of majority students had been entitled for special education services.

In the elementary school, there were a total of 154 students in grades 1-5. Of these students, 81 were male and 73 were female. Thirty-three of these students were African-American (21%), 13 were Asian-American (8%), and 5 were Hispanic-American (<1%). There were 8 entitled students (5%), of which only 3 were of minority backgrounds.

In the 4th grade, there were 31 students, 18 male and 13 female. There were 6 African-American students, 2 Asian-American students, and no Hispanic-American students. These students are broken into two classes. In Sam's class there are 15 students, including 9 Caucasian males, 2 African-American males, 3 Caucasian females and 1 African-American female. One other student in the class is receiving special education services. The teacher is a Caucasian male. There are also several pre-service teachers in the room from time to time for various experiential reasons.

Health/Developmental History

Sam's mother was interviewed in order to review his developmental and health history (see Appendix B). Sam was a normal, healthy child growing up. There were no reported problems during prenatal development or any complications during birth. Sam was of normal weight and size at birth. He reportedly developed at a normal rate; in fact Sam's mom believes that some milestones were reached ahead of schedule. There were no major illness or accidents during his childhood years that would have affected Sam's development. Other than medication for normal childhood illnesses such as the flu, the

only medication Sam has been on is for various allergies. Sam's mother described Sam's childhood temperament as "always happy."

Family Background

Sam lives in a house in a nearby city with his mother, her mother, his 18-month-old sister, and his uncle. Sam's mother feels the family is quite close, and always busy. On a typical day Sam goes to school, comes home and finishes any uncompleted homework, has supper, watches some TV and then bathes before going to bed. His bedtime is 8 pm on weeknights. Weekends are less routine and there are often family commitments that are scheduled.

Sam's mom works for a city-owned museum. She works from 9-5 everyday, so Sam goes to his cousin's house after school for an hour or so before his mom picks him up. Sam's parents were never married. His dad lives in Indiana with his wife and their daughter. Sam visits him two to three times during the year and on either Thanksgiving or Christmas. He also spends a week with him during the summer months. Sam feels he has a good relationship with his dad and even though he sometimes feels nervous around his step mom and stepsister, likes them also. His grandma also works but is usually around in the evenings. Sam said very nice things about her living with them and says she encourages him to do well in school by helping him study his spelling lists. Sam's uncle helps out with school rides, but Sam was somewhat uncertain of their relationship. He

said they get along well when his uncle is in a good mood and he enjoys roughhousing and doing pranks around the house.

Sam's role within the family is that of the helper. He sometimes does chores around the house without even being asked and is a big help with his younger sister. He often helps by babysitting while his mom is showering or doing other things around the house. He also takes care of the family dog. The things he likes to do most at home are to play video games, watch TV, play with various toys and listen to music. Sam and his family have only lived at their current residence for the last year. There are very few children in the neighborhood to play with, but Sam does interact with a female cousin who is the same age and also with other boys in his Boy Scout troop. He spends part of the summer with his grandparents in Cincinnati, Ohio. Sam's mom sees Sam as a child who wants everyone to be treated fairly and can be confused when he is treated unjustly. She sees him as a very friendly person who is nice to everyone.

At home, Sam's discipline system varies for the type of offense committed. The most often punishment is to have a preferred activity removed (such as TV or video games) or being sent to his room. If there are problems at school (normally for excessive socializing), Sam's mom has sentences he must write a specified number of times (such as "I will not disrupt the class."). Sam gave an exasperated look when asked about the discipline system at home. He felt he gets in trouble quite often, but when pressed for how often, he said that it wasn't very much. He described being on "punishment" which

meant that “anything with a screen” was taken away (such as TV, video games, etc.), but that this only happened once every other week or so. After talking about discipline for some time, Sam refuted his earlier statement by saying that he didn’t get into trouble that much. Sam’s mom agreed with this statement saying Sam needed to be disciplined at home only about every other week.

There is a very defined emphasis on education for Sam at home. His mom feels education is very important and she sends him to school to learn. She also feels Sam is well aware of her feelings about education and has adapted to making education a priority of his own. She has talked with him about having to work hard to be good at things and that some people have to work harder than others to be good at things. This is how she talked to him about his problems at school, just that he was going to have to work a little harder than some of his classmates. But she said one of Sam’s real strengths was his persistence, his willingness to keep trying, and she thought this characteristic would be beneficial to him in his education. She felt his biggest weakness at school was his socializing and how that takes away from his learning.

When asked, Sam said he had no weaknesses in school. After some thought he decided that long division needed work because it was “hard.” He felt his strengths were in math, reading, music, art and drama. He said he really likes it at his school because his teachers were nice. He was worried about his future however, wondering where he would be going to high school if his school turned into a K-8 school.

Sam is attending his school through open enrollment. His attendance is based on his mom's decision that this is the school where he could receive the best instruction and best education right now. She felt the teachers were knowledgeable and looking out for Sam's best interest. She also felt the evaluation of his eligibility for special education services was done well. She was happy that Sam's teachers realized that he needed extra help instead of having this need go unnoticed. She felt the extra assistance Sam will receive through special education would make him a stronger student.

As for the future of Sam's education, his mom feels he will be successful. She will encourage him to continue to receive assistance when needed and ask for help when he doesn't understand. Her vision is for him to attend college and then find a profession he enjoys. She feels Sam has the personality to be the best at whatever he chooses to do. Sam's mom feels that despite Sam's difficulties with school, progress is being made and feels the extra educational opportunities afforded by his school have had a positive impact on Sam's education and will continue to do so in the future.

Sam also had positive plans for his future. He knows he needs to improve on his reading and writing skills in order to be a better student in the future. He also said he had no choice as to whether or not he was going to college, his mom told him he had to go, but he wanted to anyway. He can see himself in the future as a football player or a singer. Sam had no questions about his education, but said he really enjoyed doing individualized activities with the special education teacher.

The Assumptions of Assessment

Shapiro (1996) outlines seven assumptions of an assessment process to ensure its accuracy, fairness, and appropriateness for the child. This outline was used post-hoc to evaluate the appropriateness of the evaluation process completed. The following section is a brief overview of these recommendations and how Sam's evaluation assessment fulfilled them.

1. The assessment must reflect an evaluation of behavior in the natural environment. This is important because the learning and the intervention will probably both take place in the classroom environment. The assessment must be able to examine the behaviors in the natural environment so appropriate interventions are put in place. In Sam's case, this requirement was fulfilled by doing systematic behavior observations, evaluating work samples, and looking at the cumulative file, which reviews his classroom behaviors from previous years.

2. The assessment should be idiographic rather than nomothetic. When an assessment is performed, it is valuable to compare the results to a normative group. However, when implementing an intervention, we must be able to compare the student's current performance to his/her performances of the past. It is therefore essential to gather baseline data that can be used for comparison in post-intervention monitoring. Both types of data are useful, however measuring growth in the student's performance is more valuable for progress monitoring. In Sam's case, this was accomplished by assessing his

weakness areas in math and writing through curriculum based assessments. A reading baseline was also established to provide comparison data for progress monitoring purposes. These assessments can be repeated after implementation of the interventions to measure growth.

3. What is taught and what is expected to be learned should be what is tested.

This is a logical part of assessment. Evaluations should only assess the things that are important in the education process. Curriculum based assessment procedures accomplish this requirement because they are based on the curriculum itself. Sam was administered curriculum based assessments in math and writing.

4. The results of the assessment should be strongly related to planning

interventions. Part of an assessment is to identify the needs of the child being evaluated. In this way, the assessments can be a natural link to intervention planning. Standardized tests have a poor record of being linked to interventions (Shapiro, 1996). The newer curriculum based assessments are much more able to be linked to classroom interventions because they measure a child's ability on the curriculum. That is the reason assessments in Sam's curriculum area were administered. This allows the special education teacher, the general education teacher and the school psychologist to begin planning appropriate interventions immediately after the assessment process.

5. Assessment methods should be appropriate for continuous monitoring of student progress, so that intervention strategies can be altered as indicated. This

requirement also relates back to being able to measure growth from a baseline. Evaluating the success or failure of interventions after a short amount of time is valuable, therefore progress monitoring must be able to be completed often. This is another advantage of curriculum based assessment. It can be readministered time and time again without practice effects because there are such a variety of materials that can be used. In the current only the behavioral component of the study cannot be monitored appropriately due to an error in planning on the part of the evaluator.

6. Measures used need to be based upon empirical research and have adequate validity. Standardized measures have a plethora of information concerning reliability and validity data. All of the standardized tests administered to Sam are commonly used and have adequate psychometric properties. Curriculum based assessments also have fairly good psychometric properties, however more of the reliability and validity assurances fall on the shoulders of the evaluator in these assessments. The same can be said for work sample evaluations. Although the measures used were not necessarily researched before they were given, the post-hoc research has shown them to be reliable and valid assessment procedures.

7. Measures should be useful in making many types of educational decisions. All of the measures that were administered to Sam were selected for a specific purpose and provided data that, when accumulated, helped make decisions regarding his educational

needs. There has been no further data collection needed to make the appropriate educational decisions regarding Sam's instructional needs and interventions.

Assessment Procedures

Sam was assessed in several different areas in order to get a more complete understanding of his functioning in the class environment. Shapiro (1996) suggests that different types of tests reveal various pieces of information, therefore a number of assessment strategies should be used when conducting an educational evaluation. The specific types of assessment procedures used in this study were: (a) cumulative file review, (b) interviews, (c) standardized assessments, (d) curriculum based assessment, (e) work sample evaluation, and (f) systematic behavioral observations. A review of each of these types of assessments and their respective strengths and weaknesses will allow the reader to understand why each was used in the evaluation process.

Cumulative File Review

The most effective way to gather initial student information is through a student file review (McCaffrey, 2000). The cumulative file will have information about the student's academic career including important information such as: number of schools attended, developmental history, medical concerns, past standardized assessment scores, absentee patterns, teacher comments, past grades, vision and hearing information and how to contact parents. Advantages of a cumulative file review are that a great deal of information can be gathered quickly and without taking time from the teacher, student or

parent. The disadvantage is the information gathered is second-hand and is subjective based on the biases of previous educators. Information could be inaccurate, old, or missing from the file. The cumulative file is a good place to start, but careful interpretation should be made and any questionable data should be confirmed or refuted in the evaluation process. Depending on the school, a student may also have a problem solving file and an IEP file. As part of Sam's evaluation process, his cumulative file and problem-solving file were examined.

Student and Parent Interviews

Interviews were conducted with both Sam and his mother in order to collect information on family background, developmental issues, and home life, as well as other information that could not be found in the cumulative folder. The interviews followed the diagnostic interview format described by Kamphaus and Frick (1996) and Sattler (2001), except the interviews were much less formal as it was an information gathering session as opposed to being strictly diagnostic. The informal interviews consisted of a series of questions and then either follow up or probing questions if the evaluator felt more clarification was needed (see Appendix B).

The advantage of interviews such as this is the first-hand information that is gathered, as information comes straight from the source as opposed to a file or another reporter. It is also helpful to understand the parent's point of view. One disadvantage is the informal nature of the interviews. There will be no direct way to use this information

to help in a diagnosis, but that is not the purpose of the interview at this time. Another disadvantage may be the low reliability that comes when dealing with human subjects (Kamphaus & Frick, 1996).

Standardized Assessments

There were several different standardized assessments which were used to gather information for Sam's initial evaluation. Shapiro (1996) describes two different types of standardized assessment, norm-referenced and criterion-referenced. A norm referenced assessment contains items that sample specific academic skills within a content area and compare the results of the child tested to scores obtained by a large, nonclinical, same-age/same-grade sample of children. Examples of norm-referenced tests used in this evaluation are the Iowa Tests of Basic Skills and the Wechsler Intelligence Scale for Children-III. Criterion-referenced tests require comparison of student performance against an absolute standard that reflects acquisition of a skill. An example of a criterion-referenced test used in this evaluation is the Qualitative Reading Inventory-3.

A standardized test should not be used simply because it has been published. The purpose, score interpretation, norm groups and psychometric properties of the test are essential information that should be carefully considered during its use. All of the standardized tests used in this evaluation were examined for these characteristics and a review of each follows.

Iowa Tests Basic Skills. The Iowa Tests of Basic Skills (ITBS) is an achievement test that examines a variety of “basic skills” in several curricular areas. The purpose of the ITBS is “to provide test results that may be used to improve the quality of instruction” (Brookhart, 1998, p. 540). The tests, developed by Hoover, Hieronymus, Frisbee, and Dunbar (1990) are one of the most often used achievement tests in the nation. Specifically, the test results were reported in Reading, Language, and Math. In each academic area, there are several subtests. For each subtest, scores are reported in several different ways. Sam’s ITBS scores are reported for each subtest by Iowa Percentile Rank (IPR) and National Percentile Rank (NPR). Percentiles represent the percentage of the norm group that scored at or below Sam’s score. For instance, if Sam’s percentile rank was 50, 50% of the norm group scored at or below the same score as Sam.

In the Reading portion, the Vocabulary test measures a student’s general vocabulary content by presenting a word in the context of a short phrase or sentence and asking the student to select the answer that most nearly means the same as the word. Reading Comprehension requires the student to read a short passage and then draw inferences or generalize about what they have read. The Reading Total is a weighted combination of the two reading scores and represents a general score regarding the student’s overall reading ability.

In the Language portion, the Spelling test presents the student with four words and a *No Mistakes* category and asks the student to identify the misspelled word or to

choose the *No Mistakes* category. Capitalization requires the student to identify undercapitalization or overcapitalization in a brief written context. Punctuation requires the student to identify underpunctuation or overpunctuation in a short written context. Usage and Expression requires the student to identify errors in grammar and word usage in short contexts and also to choose the best or most appropriate way to express an idea presented as a sentence or a paragraph.

In the Math portion, Math Concepts and Estimation requires students to understand math ideas, relationships, visual representations and deals with number properties and operations, algebra, geometry, measurement, probability and statistics, while the second part measures computational estimation, number sense, mental arithmetic and estimation skills. Math Problem Solving and Data Interpretation consists of multiple step word problems, real-world story problems, tables and graphs, and mathematical relationships, which require the student to choose the best approach to solving the problem rather than asking for a computation answer. Math Computation requires the student to use arithmetic operations, including addition, subtraction, multiplication and division, including problems with whole numbers, fractions, decimals, and various combinations of these.

The ITBS was normed on a sample of 170,000 students from across the nation. The authors were careful to have an accurately stratified norm group based upon sex, age, socioeconomic status, ethnic background, region, and type of school (private vs. Catholic

vs. public). Students who were receiving special education outside of the regular classroom for more than 50% of the school day were excluded from the norming process. This is important when comparing students' scores on the ITBS who are in special education classes to the normative data. All students in the normative sample took the test with no accommodations or modifications. The normative data used in this study were derived from the 1993 renorming.

Content validity is essential to the ITBS because of their self-promoted link to local curriculum. To facilitate the existence of content validity, the authors provided detailed descriptions of the tests and have described the research and development program undertaken to ensure the tests reflect contemporary educational practices (Cross, 1998). Brookhart (1998) provides that the content validity presented by the authors is positive. The ITBS was found to be a reasonable predictor of future success on test performance and grades (Brookhart, 1998). The authors of the test are commended for also including studies that do not necessarily support the validity of the tests and cautioning users against improper use of the tests and their results.

The ITBS is one of the most reliable tests in the industry (Brookhart, 1998). Internal consistency reliability correlations range from .85 to .92, and Reading Total, Math Total, and Language Total reliabilities are all above .90. Equivalent forms reliability ranges from .68 to .93 across all levels. The authors caution against lower reliability levels for the younger age groups, which can be expected in almost any type of standardized

test. All of the information supports the claim that the ITBS tests are a reliable source of standardized information.

The ITBS is a valid, reliable source of information regarding a student's achievement. The purpose of the test is to identify strengths and weaknesses in the student's curricular skills and to make norm-referenced comparisons. The norm group was carefully constructed and represents an accurate view of student demographics. Although all standardized tests should be used with caution, when the ITBS is used practically and validly, the results should be useful and practical for school personnel.

Wechsler Intelligence Test for Children-III. Another norm-referenced assessment given to Sam was the Wechsler Intelligence Test for Children-III or the WISC-III (Wechsler, 1991). The WISC-III is composed of two main parts, verbal and performance, which are made up of several different subtests each. The two scales are combined to reveal the Full Scale IQ. This is a reliable and valid measure of the child's overall general intelligence and is the most commonly reported score (Sattler, 2001). Sattler (2001) provides an understanding of what each part of the WISC-III measures.

The Verbal Scale measures verbal comprehension, application of verbal skills and information to the solution of new problems, verbal ability, ability to process verbal information and the ability to think with words. The Verbal Scale includes six subtests. The Information subtest measures range of factual knowledge, fund of information, long-term memory, acquired knowledge and crystallized ability. The Similarities subtest

measures verbal concept formation, language development, reasoning abilities, capacity for associative thinking, and the ability to separate essential from nonessential details. The Arithmetic subtest measures numerical reasoning, mental computation, quantitative knowledge, application of basic arithmetical processes, concentration, attention, short-term memory, and mental alertness. The Vocabulary subtest measures word knowledge, learning ability, richness of ideas, memory, concept formation, and verbal fluency. The Comprehension subtest measures social judgment, logical reasoning, application of practical knowledge, knowledge of conventional standards of behavior, reasoning, and moral and ethical judgment. The Digit Span subtest measures short-term auditory sequential memory, memory span, rote memory, immediate auditory memory, attention span, concentration, and fluid ability.

The Performance Scale measures perceptual organization, the ability to think in terms of visual images and to manipulate them, nonverbal ability and the ability to form abstract concepts and relationships without the use of words. The Performance Scale is also made up of six subtests. The Picture Completion subtest measures perceptual organization, identification of familiar objects, concentration on visually perceived material, alertness to detail, reasoning, visual processing, visual perception, and fluid ability. The Coding subtest measures processing speed, visual-motor coordination, speed of mental operation, psychomotor speed, visual recall, symbol-associative skills, and visual sequential processing. The Picture Arrangement subtest measures planning ability,

interpretation of social situations, nonverbal reasoning ability, common sense, anticipation of consequences, and attention to details. The Block Design subtest measures visual-motor coordination, spatial visualization, visual processing, abstract conceptualizing ability, and speed of mental processing. The Object Assembly subtest measures visual processing, visual-motor coordination, ability to synthesize concrete parts into meaningful wholes, spatial ability and fluid ability. The Symbol Search subtest measures perceptual discrimination, speed of mental operation, attention, concentration, short-term visual memory, and cognitive flexibility.

There are four other scale scores that are often reported for a child completing the WISC-III. The Verbal Comprehension Index is made up of the Comprehension, Vocabulary, Similarities, and Information subtests and measures verbal comprehension, application of verbal skills and information to the solution of new problems, verbal ability, ability to process verbal information, and ability to think with words. The Perceptual Organization Index is made up of the Object Assembly, Block Design, Picture Arrangement, and Picture Completion subtests and measures perceptual organization, ability to think in terms of visual images and manipulate them, ability to interpret and organize visually perceived material, and ability to form relatively abstract concepts and relationships without the use of words. The Freedom from Distractibility Index is made up of the Arithmetic and Digit Span subtests and measures ability to sustain attention, short-term memory, numerical ability, encoding ability, ability to use rehearsal strategies,

ability to shift mental strategies on symbolic materials, and ability to self monitor. The Processing Speed Index is made up of the Symbol Search and Coding subtests and measures processing speed, perceptual discrimination, speed of mental operation, psychomotor speed, attention, concentration, short-term visual memory, visual-motor coordination, cognitive flexibility, and fluid ability.

The WISC-III was normed in 1988 from a standardized sample that was representative of the U. S. population of children according to the US census (Wechsler, 1991). A stratified random sampling plan was used to ensure that representative proportions of children from each demographic group would be part of the sample. The sample was stratified along the variables age, gender, race/ethnicity, geographic region, and parent education. There was also a 7% representation of children receiving special education and 5% were in the talented and gifted program. Reviews of the WISC-III by Braden (1995) and Sandoval (1995) found in the Twelfth Mental Measurements Yearbook agree that the 1988 norming of the WISC-III did an adequate job of capturing a representative sample.

As with any standardized test, the psychometric properties of reliability and validity are important in interpreting scores. Reliability on the WISC-III was assessed by a split-half method. The items on each subtest were divided into two half-tests that approximated parallel forms with approximately equal variances (Wechsler, 1991). The scores were then correlated and the resulting correlational coefficient was corrected using the

Spearman-Brown formula. The subtests ranged in reliability across age groups from the lowest subtest of Object Assembly (average of .69) to the highest subtests of Block Design and Vocabulary (average of .87). The seven index split-half reliabilities were also high (.85-.96) but this is to be expected since the indices sample a broader range of behavior (Wechsler, 1991).

Test-retest reliability was also computed to determine the stability of scores across time (Wechsler, 1991). Because Sam is 9 years old, and the closest age group on which reliability data were provided was at 10 years old, this data is reported here. The number of days between administrations ranged from 12 to 63 days, with a median of 23 days. Stability on the subtests was averaged at .72. Once again, the index scores were much higher, averaging a correlation of .85.

Interscorer agreement was also reported by Wechsler (1991). Interscorer reliability was in the high .90s because most WISC-III subtests are straightforward in their administration and scoring. However some of the tests are not as straightforward and further analysis was conducted on these measures. The interscorer agreement on these subtests were: Similarities-.94, Vocabulary-.92, and Comprehension-.90. Although the technical manual concludes that even the subtests that require more scorer judgment can be scored reliably, it must be noted that any deviation from the standard administration and scoring procedures will lower interscorer reliability coefficients.

The validity studies cited in the WISC-III manual and the research literature support the validity of the WISC-III (Sattler, 2001; Wechsler, 1991). Studies have been conducted to measure the concurrent validity between the WISC-III and other major intelligence tests, such as the Differential Abilities Scales (DAS; Elliott, 1990), the Stanford-Binet Intelligence Scale, Fourth Edition (SB-IV; Thorndike, Hagen, & Sattler, 1986), and the Otis-Lennon School Ability Test (OLSAT; Otis & Lennon, 1989), among the other Wechsler Intelligence Tests. Findings from these studies indicate Full Scale correlations ranging from .65 to .96 with a median of .83. Moderate correlations (.46) were also found between the WISC-III Full Scale IQ score and school grades for students age 6-16 years old. The numbers show a satisfactory level of concurrent validity regarding the WISC-III.

There have also been a number of studies conducted to investigate the predictive validity of the WISC-III. Most of these comparisons were made against standardized achievement tests, such as the Wide Range Achievement Test (WRAT; Jastak & Jastak, 1978). Median correlations between the Full Scale IQ and reading scores on the WRAT were .56 and with arithmetic scores were .52. Verbal Scale comparisons were similar to Full Scale correlations, however Performance Scale correlations were lower, at .43 and .36, respectively (Wechsler, 1991). In summarizing other achievement tests, Sattler (1988) reported a median correlation of .66 for Full Scale and reading scores and a median of .56 for Full Scale and arithmetic scores.

In order to get a better understanding of the psychometric properties of the WISC-III, two reviews from the Twelfth Mental Measurements Yearbook (Sandoval, 1995) were examined. Both reviewers of the WISC-III agree the test has outstanding psychometric properties. Braden (1995) warns that subtest stability correlations are a bit weak, but that IQ and Index stability is excellent. There is also mention of adequate evidence for IQ-achievement predictive validity. Sandoval (1995) mentions the lack of meaning and interpretation for the Freedom from Distractibility and Processing Speed scales. Both reviews agree that this is one of the most scrutinized standardized tests ever and it is one of the psychometrically strongest also.

The Qualitative Reading Inventory-3. There was also a criterion-referenced standardized test used to evaluate Sam's reading skills called the Qualitative Reading Inventory-3 or the QRI-3 (Leslie & Caldwell, 2001). The QRI-3 is an individually administered informal reading inventory designed to provide diagnostic information about conditions under which students can identify words and comprehend text successfully and conditions that appear to result in unsuccessful word identification, decoding and/or comprehension. It can be used to estimate reading level, to group students and choose appropriate textbooks for students. The test measures five specific areas reported for Sam: word recognition in isolation, word recognition in context, comprehension on an orally read passage, comprehension on a silently read passage and an overall comprehension level. For each area, a level is assigned, ranging from "Frustration" to

“Independent.” At “Independent,” a student reads orally with 98% accuracy or higher and answers both silent and oral passage comprehension questions with 90% accuracy. At “Instructional,” a student reads orally with 90% accuracy when counting all miscues and has a comprehension level of 70%. At “Frustration,” a student reads less than 90% of the passage accurately and answers less than 70% of the comprehension questions correctly. These levels are not always stable and may vary from narrative to expository passages and from unfamiliar to familiar passages so interpretation should be done with caution (Leslie & Caldwell, 2001).

In order to analyze the psychometric properties of the QRI-3, a pilot study was completed (Leslie & Caldwell, 2001). The study was conducted with 267 children in first through ninth grade from seven schools and one university clinic in the Milwaukee, WI area. The elementary sample ($n = 225$) consisted mostly of children with below-average reading level since they are the main demographic target of the assessment. The authors indicated that a racial mix of Caucasian, African-American, Hispanic and East Asian subjects participated. For instance, the 8th grade sample ($n = 42$) was 62% African-American, 33% Caucasian, 2% Hispanic, and 2% Arabic. Males and females were almost equal in each sample. No other data were given concerning the sample.

Three types of reliability were assessed on the QRI-3: alternate forms reliability, internal consistency and interscorer reliability. Alternate forms reliability was assessed by examining total comprehension level across passages of the same type using

Livingston's K^2 procedure. It was found that all passage levels were correlated above .80 on the two alternate forms given and that 75% of the grade level passage forms were correlated above .90. It can be assumed by these numbers that the QRI-3 passages at the same level would result in fairly similar scores most of the time. The internal consistency of the passages was also measured on total comprehension and also in relation to standard error of measurement because of the reduction of variance by not giving harder passages to "Frustration" level readers (Leslie & Caldwell, 2001). Almost all passages had large SEMs, meaning that an obtained score would have a 68% confidence interval across a wide range, rendering interpretation almost impossible. To overcome this weakness, the authors advise users to administer several of the passages at each grade level to reduce the confidence interval and have a better chance at obtaining a true score. Interscorer reliability was measured by having three judges trained by the QRI-3 authors listen to a tape of a reading and scoring it on all areas. Then a sample of 49 readings scored by untrained persons listening to the same recording and scoring it according to the scoring instructions was conducted using Cronbach's alpha procedure. Reliability estimates were .99 for total miscues and .98 for explicit and implicit comprehension. The authors propose from this data that an examiner should be able to score the QRI-3 reliably without extensive training.

The two types of validity assessed on the QRI-3 were content validity and criterion-related validity. Content validity was accounted for in the design of the tests.

In particular the authors attempted to design the test based upon research. Taken into account in this process was the use of both narrative and expository passages, use of rhyming passages, use of varied familiarity, prior knowledge effects, miscues which change the meaning of the passage, measuring comprehension in three different ways, and words which require different decoding skills (Leslie & Caldwell, 2001). The degree of content validity depends on the user's view of the importance of the issues described. There is no data reported on predictive validity, however concurrent validity seems to be strong. Scores at the instructional level from every grade were correlated against Total Reading scores on other standardized achievement tests (including the Iowa Tests of Basic Skills). Correlations ranged from .48 to .86 with a median of .63. As for comprehension, the results indicate that the instructional levels obtained from the QRI-3 and comprehension scores from standardized reading achievement tests are measuring some common factors and support the validity of the instructional levels obtained on the QRI-3.

There were no reviews of this reading inventory found in the *Mental Measurement Yearbook*. Therefore the only review available of this data is from the authors. Interpretation of the psychometric properties and the scores derived from the QRI-3 should be taken with caution because of this fact. Strengths of standardized tests include the strict standardization of the administration and scoring, the opportunity to compare the target child's score with a normative sample, and their availability.

Weaknesses include poor curriculum-test overlap, insensitivity to small changes in behavior, and an incapability to link assessment to intervention (Leslie & Caldwell, 2001). In-group testing situations, context and environment could not be accounted for.

There has been much criticism as to the use of standardized tests with nonmajority populations (Ridley, Hill, & Wiese, 2001). Much of this criticism is based on misuse or misinterpretation of testing results and placement of minorities into special education. With the new amendments made to the Individuals with Disabilities Education Act (P.L. 94-112), the occurrence of this abuse has been greatly reduced (Yell, 1998). Norming of the standardized tests has also been an issue in assessment. The normative group must be a reflection of the type of students with which it will be used (Padilla, 2001). In Sam's evaluation, standardized assessments used have been normed on diverse populations (Hoover, Hieronymus, Frisbee, & Dunbar, 1993; Leslie & Caldwell, 2001; Wechsler, 1991). Using a standardized test as a piece of data rather than the sole data to make educational decisions helps to reduce the problems associated with standardized tests. Because the standardized test information was used as convergent data, the cultural limitations for using the standardized tests have been reduced.

Curriculum Based Assessments

Sam was administered several different assessments in a curriculum based format. Although standardized tests using regional or national samples are often used in the process of student evaluation, locally normed curriculum based assessments have become

more popular as the inadequacies of nationally standardized testing have been publicized (Shapiro, 1996). Curriculum based assessment actually is a standardized, norm-referenced assessment procedure that uses local norms as opposed to regional or national norms. The use of local normative data allows for a better comparison of the target student to other students who are receiving the same instruction. Curriculum based assessment is defined as “a system for determining the instructional needs of a student based upon the student’s on-going performance within existing course content in order to deliver instruction as effectively and efficiently as possible” (Gickling, Shane, & Croskey, 1989, pp. 344-345). This is a logical assessment procedure which gathers data on tasks being expected of the student in the classroom and determining their level of performance on these tasks at a local level.

Curriculum based assessment procedures have many strengths. Using curriculum based assessment has been shown to be useful in making decisions about pupil placement in special education and identifying instructional objectives (Marston, 1989). This is because the material being used in the assessment is from the classroom curriculum, allowing for direct comparisons to be made between test scores and classroom difficulties. Other advantages of using locally-normed curriculum based assessments over nationally-normed standardized assessments include lower cost, not relying on selection-type responses, sensitivity to small changes in student behavior, and the ability to be used as progress monitoring procedures. Perhaps the biggest strength of locally normed

curriculum based assessment is that it measures the student's ability on the same objectives and tasks that are required in the classroom (Idol, Nevin, & Paolucci-Whitcomb, 1999). This allows a much more direct link between the student's strengths and weaknesses and what is happening in the classroom curriculum.

The major weakness cited among curriculum based assessment research is its dependence on more traditional psychometric concepts to support its reliability and validity. Essentially, curriculum based assessment measures have only been employed in the concurrent validation for discriminating students who have already been identified by use of more traditional methods (Shapiro, 1996). Another difficulty associated with curriculum based assessment is the difficulty in obtaining norm-referenced data. Each school must norm their own curriculum, otherwise only criterion based judgments can be made. There is no way to compare a student to his peers unless the school has been normed in the curriculum based process. Sam's school system has normed 4th, 5th, and 6th graders on curriculum based math and language art assessments within the last year.

Curriculum based assessment has been shown to possess acceptable psychometric characteristics (reliability and criterion-related validity). A meta-analysis conducted by Fuchs and Fuchs (1986) examined the reliability and validity data on 21 different studies that employed the curriculum based assessment process. They found that these procedures achieved both reliability and validity coefficients that were acceptable. Shinn (1989) also provides ample evidence of reliability and validity for curriculum based

assessment across many different academic areas. If administered properly, curriculum based assessments can be both reliable and valid.

Shinn (1989) describes the different ways in which eligibility determination can be made. The traditional model focused on a discrepancy between ability and achievement in any given individual. This model has been abandoned by Sam's school. Curriculum based models focus on the difference between the expectations of a regular education student and the actual performance of the referred student. At Sam's school, students are referred when their performance in the classroom is no longer of the same standard as typical peers and then the evaluation searches for the magnitude of this difference.

Work Samples

Work samples, or permanent products, can be found in every classroom the child is in. Work samples are nothing more than the work the child does in the classroom, such as worksheets, workbooks, quizzes, tests, reports and other academic activities. All of these materials represent potentially important information that can assist the evaluator in learning more about a student's academic performance under the naturally occurring contingencies in the classroom (Shapiro, 1996). What curriculum based assessment does in contrived situations, permanent product review does in noncontrived situations.

Besides being an example of what the student does in the classroom, permanent products are usually easy to come by. They require little teacher effort and no time out of the academic environment for the student. Certain error patterns may also be identified

that could not have been noticed in a testing-type situation. Behavioral advantages are that the student is motivated only by the classroom contingencies rather than the attention in a one-to-one situation, giving the reviewer an idea of the motivational status of the child in the everyday classroom.

One major weakness of permanent product review is the inference involved in interpreting the work samples. Since the child is not there to explain his/her reasoning or logic behind the work, the reviewer is sometimes forced to make that assessment alone, which may reduce the validity and reliability of the inference. This subjectivity can be reduced by going over the material with the child and having them verbalize their thought processes concerning their work. Another disadvantage is the lack of context that goes along with the work sample. Perhaps the child was ill or was having a problem at home on the day the work was completed. This information would not be present in the work sample even though it may have greatly affected the results.

Several aspects of Sam's classroom work samples were examined for the evaluation. Samples of his writing were evaluated by comparing his writing to the writing of his peers concerning such things as capitalization, punctuation and spelling, as well as legibility and story structure. Samples of his math work were evaluated to look for common errors and patterns in his problem solving processes.

Systematic Behavior Observations

In order to better understand the role of Sam's on task behavior in his academic difficulties, systematic observations were conducted as part of his evaluation assessment. Systematic observation represents the most direct and desired approach to data collection concerning classroom behavior (Kamphaus & Frick, 1996). In a systematic observation, the goal is to note the occurrence of the behavior of interest in the setting where problems have been occurring (Hintze & Shapiro, 1995).

Kamphaus and Frick (1996) developed a step by step procedure for how to set up an observation program. The first step in a behavioral observation is to identify the target behavior. Based on teacher comments both from the cumulative file and the interviews conducted with the general education teacher, it was hypothesized that Sam's off task behavior could be a facilitating factor in his difficulties in some academic areas. It has been well documented that attention difficulties can interfere with the educational process (Landau & Burcham, 1995). Although it is neither the intention nor the responsibility of the school to diagnose Attention Deficit Disorder, Sam's behavioral characteristics as described by his general education classroom teacher are similar to the diagnostic criteria for ADD (Diagnostic Criteria from DSM-IV-TR, 2000). In particular, the ability to sustain attention on a specified task, which is important for educational attainment, was an issue for Sam. Therefore on task behavior was selected as the target

behavior in order to observe how much time Sam spent engaged in the activity he is supposed to be engaged in.

The second step is to decide in what setting the observation will take place. Five different observations were completed, all in the general education classroom, since this is the setting where Sam was having the most difficulty keeping his attention focused. This is a pretty common occurrence for children with attention problems, as the academic setting is a much more restrictive environment than are less structured settings like being at home or in noncore academic classes (Landau & Burcham, 1995).

The third step is to decide upon a recording technique. The recording procedure used was a partial-interval, time-sampling technique which involved observing Sam's behavior for a 45 second interval, then taking 15 seconds to record if he was on task or off task and also to record any environmental or behavioral information deemed to be interesting and important. When the observation was complete, the number of on task intervals was divided by the total number of intervals in order to find a percentage of intervals that Sam was engaged in the activity he was supposed to be engaged in. A randomly selected peer was also observed at the same time in order to get comparison data.

The final step is to decide who will conduct the observation. The school psychologist, who is trained in behavioral observation techniques, is a good choice and was the person chosen to observe Sam.

Cultural Issues

As previously mentioned, Sam is an African-American male, and the evaluator is a Caucasian male. Although this did not present itself as an obstacle during the assessment process, it is important to understand the cultural issues within this case and how they were accounted for during the evaluation process.

Psychoeducational assessment is an area of professional practice that has been particularly criticized because of differential treatment of racial and ethnic minorities in the past (Padilla, 2001). Educational and placement testing has been misused in the past, resulting in an overrepresentation of minorities, in particular, African-American males, in special education (Banks & McGhee-Banks, 2001). Assessment procedures and the tests used in an evaluation must be chosen with an awareness of multicultural issues to ensure that the decisions made are both fair and appropriate.

In standardized assessments, the major focus of cultural sensitivity is on the characteristics of the norm group. It has been argued that tests normed on majority group populations cannot be indiscriminately used with individuals who differ from the normative population (Padilla, 2001). Whereas intelligence testing has been a target for this criticism in the past, newer norms for these tests have taken into careful consideration the inclusion of minority groups so the tests can be used appropriately with a larger number of sub-populations. Many newer tests have also been normed more appropriately concerning their use with minority populations (Suzuki, Short, Pieterse, &

Kugler, 2001). The standardized assessments used in this study were used in a manner to confirm other data gathered. Had the standardized assessments disagreed significantly with other data gathered, this issue would have been taken into consideration at the entitlement meeting.

In the past, the WISC-III has been shown to have a poor record when it comes to cultural and racial biases (Sattler, 2001). In particular, African-American males were overrepresented in special education classrooms due to the school personnel's dependence on intelligence tests as the sole data for special education placement. Although this practice has been reduced today, it is fair to say the cultural and racial biases found in intelligence tests in the past are still present today. Therefore results from an intelligence test on an individual of another culture or race should be interpreted with extreme caution. With Sam, this would have been a major concern had his scores predicted below normal intelligence. It was the evaluator's opinion before giving the test that Sam was of normal intelligence, however it was deemed important to know his intelligence quotient for this project. In the evaluator's regular practice procedures, Sam probably would not have been administered an intelligence test because of the possibility of racial and cultural bias in the results.

Curriculum based assessment is often normed on students in the same school and same classroom as the target student. This allows for a much more accurate comparison because all students have received the same instruction from the same teacher in the same

environment. This would eliminate some of the cultural bias of different interpretation of test items, different sets of background knowledge and expectations, and the different experiences nonmajority cultures may have had (Padilla, 2001). It should be noted however, that teacher-made tests and assignments may still have unintentional cultural bias.

Kamphaus and Frick (1996) outline several suggestions which help facilitate the process of an appropriate evaluation when working with the family of the student, including building a relationship with the student and involving the parents during the assessment process. The evaluator working with Sam felt these were the two most important aspects concerning multicultural issues in this evaluation. Sam is a well-adjusted and well-acclimated student who fits in well socially and has not had any school-related issues concerning his race or ethnicity. Good rapport was built between the Sam and the evaluator, so much to the point that Sam would ask his general education teacher if the evaluator was going to come and see him on Wednesdays. Good rapport was also built with Sam's mother, indicated by conversations during the evaluation process as well as her permission and participation in this project. Although Sam is an African-American male, the team (including Sam's mom) felt the evaluation was fair and appropriate for Sam's educational needs and the outcomes were not affected by his ethnicity.

Specific Data Collection Procedures and Results

The general education teacher had many concerns about Sam's academic work and behavior. The following sections are a review of the type of assessments used and the data gathered in each area of concern.

Reading

According to his cumulative file, Sam has struggled in both fluency and comprehension throughout his educational career. Specific problems were noted with letter-sound correspondences, decoding, and oral reading (both speed and accuracy). Teacher comments indicated that Sam had a difficult time sounding out new words. Concentration had also been an issue. It was reported that he often times had trouble staying on task when doing independent assignments. According to his current 4th grade teacher, fluency is still a struggle and Sam's comprehension is poor on longer reading assignments.

Sam received help for his reading difficulties in several different ways. He has attended a university-led reading clinic almost every year since first grade and is currently attending an after-school reading clinic. In 3rd grade he received individualized help from his teacher after school when he could not attend the reading clinic because of transportation difficulties. Sam did experience some gains in his accuracy and fluency, according to reading clinic reports, however he remained below grade level in both fluency and comprehension scores. He also received small group instruction (4 or 5 students who

are low level readers) from the resource room teacher daily for _ hour since the beginning of his 4th grade year. This instruction was marginally successful, however Sam continued to be distracted by his peers and his reading proficiency did not steadily increase.

As part of the reading clinic's assessment, Sam was administered passages from the Qualitative Reading Inventory-3 by a tutor on 09/17-18/01. The results of the administration of the QRI-3 by the reading clinic are shown in Table 1. The figures in the table represent the grade level of the material that was used during the assessment. Preprimer refers to a grade level of kindergarten and below. Because this assessment procedure was given only 6 months ago, the results were taken as reasonably accurate for this project. The results indicated that Sam's reading level could be characterized as being approximately two to three levels below where his current reading level should be for a 4th grade student.

One area in which curriculum based assessment has been well documented is reading (Idol et al., 1999; Shapiro, 1996; Shinn, 1989). Reading assessment under this model can be done with many different materials, including standardized passages and classroom reading material. The main areas of assessment in reading are rate (fluency), accuracy, and comprehension.

Rate is measured by having a child read a passage and then determining how many words would be read in a one minute time period. Idol et al. (1999) recommends having the child begin reading and simply stop him after a one minute or two minute trial. This

is the procedure used for Sam’s reading evaluation. Idol et al. (1999) suggest a 4th grader reading a grade level passage at “Mastery” would read over 100 words per minute. At the “Instructional,” 70-100 words per minute is recommended, while those reading at below 70 words per minute would be considered to be at the “Frustration.”

Table 1

2001 QRI-III Results

	Word Recognition		Comprehension	
	Isolation	Context	Oral	Silent
Independent	preprimer	preprimer	preprimer	preprimer
Instructional	2	1	1	1
Frustration	3	2	2	2

Accuracy is measured in the number of words the student pronounces correctly during the reading. Omissions, substitutions, additions, repetition, self-corrections and length of pauses are all issues that need to be dealt with before the administration to keep accuracy standardized. Shinn (1989) has a list of standardization rules that may help keep scoring fair and accurate. Idol et al. (1999) suggest that accuracy on a grade level

passage should be above 95% or above for an Independent level, between 90-95% for Instructional level and below 90% for Frustration level.

Comprehension questions can be constructed from the passage selected. Idol et al. (1999) suggest six comprehension questions for each passage, including two text-explicit questions (answers found explicitly in the text), two text-implicit questions (answers connected to details in the passage) and two script-implicit questions (answers require integration of prior knowledge and one or more details from the passage). An accuracy rate of 83% or higher on comprehension questions (5 out of 6) is acceptable.

Another reading related concept that can be measured during curriculum based assessment is knowledge of common sight words. Sight words are words that appear very often in almost any reading that children should know how to read automatically simply by seeing them (Dolch, 1936). This is important because studies have shown that up to 60% of all words in early basal reading books are considered sight words (Palmer, 1986). Despite not having much contextual meaning, knowledge of these words is important for fluency and comprehension purposes. Although a reading list of sight words was not administered to Sam, his sight word vocabulary was assessed informally with a running record procedure by the special education teacher as he was reading classroom material to her during instruction time. Sam showed an adequate reading vocabulary of sight words.

To assess how he does on 4th grade reading material, Sam was administered several one-page reading passages from the 4th grade level. He averaged 68 words per minute on these passages with an average of 4 errors. When Sam's scores are compared to the data provided by Idol et al. (1982), it can be seen that he reads just under the "Frustration" level of 70 words per minute. His accuracy rate of 95% is right on the cutoff of acceptability. His comprehension was 100% on all passages administered.

Sam participated in the district-wide assessment of the Iowa Test of Basic Skills with no modifications or accommodations. ITBS scores can be reported in National Percentile Rank (NPR) and in Iowa Percentile Rank (IPR). It is often more valuable to examine Sam's Iowa Percentile Rank over National Percentile Rank as this is the data that will most closely resemble the peers in his classroom. Sam's scores on the reading portion of the test are reported in Table 2. As found with the other assessments given, Sam's ITBS comprehension score falls in the average range. However his vocabulary score was below average and his reading total indicates that Sam has some significant delays in his reading skills in relation to other Iowa students in the norm group.

Sam also has some strengths in the area of reading. On shorter passages, despite difficulties with fluency, he is still able to make meaning of what was read and answer comprehension questions accurately. He has an average sight vocabulary, which helps with his speed and comprehension. Sam is also a very persistent reader in a small group

or one-to-one setting. Despite struggling with many of the words in a passage, he continues to attempt words and to make sense of the reading.

Table 2

2001-2002 ITBS Reading Score

	Vocabulary	Comprehension	Reading Total
IPR	5	31	14
NPR	31	49	30

Reading data summary. This data indicate that Sam's reading skills are lower than average for a 4th grader. He has an adequate vocabulary of sight words, however struggles with longer words and new words. His repeated unsuccessful attempts at sounding out new words may indicate a lack of skill in decoding strategies and phonetic awareness (Walker, 2000). He has good comprehension on short reading passages, but it can be expected that in longer readings of chapter books typical of 4th graders, Sam's lack of decoding new words will greatly affect his comprehension.

Writing

Because of their language-based similarities, it can be presumed that many students who struggle in reading may also struggle with written language (Reid, 1998). This is the case for Sam, as his cumulative file and work samples indicated a significant difficulty in the area of writing. Fine motor skills appear to be adequate as Sam was able to copy from both near and far point sources with adequate legibility (based on comments found in the cumulative file). However when left to write on his own, Sam's legibility is greatly diminished. It has been reported by past teachers that Sam's writing is inconsistent and that on individual assignments he makes many writing mistakes and then erases them, which detracts from his legibility.

Curriculum based assessment was also used to evaluate Sam's writing skills, specifically in the area of mechanics and written expression. Writing mechanics include such skills as "punctuation, capitalization, misspelled words, omitted words, verb tense, syntax and parts of speech" (Baker & Hubbard, 1995, p. 726). Written expression, or composition skills, include things such as "paragraph formation, sentence structure, word choice, and overall quality of expression" (Baker & Hubbard, 1995, p. 717). Whereas mechanics are more objective measures, assessing composition is a much more difficult and subjective task. As much standardization as possible should be employed to provide fair and accurate assessment procedures for all students. These steps were taken by the evaluators (8 school psychology graduate students and their professor) that rated the

curriculum based assessment used for this evaluation. Interrater reliability on the ratings for each paper was at .8 or higher.

Idol et al. (1999) suggest an appropriate format for assessment is to give the student or students a “story starter” and allow them a specified amount of time to finish the story in any way they would like. This is the procedure that was used to assess Sam and the other 4th graders. All students were given a generic story starter and allowed to write for 10 minutes. Sam scored below average on four of the five dimensions the writing sample was scored on (ideas, organization, voice, word choice, and sentence structure; he scored slightly above average on presentation). His main difficulties appeared in his punctuation/capitalization usage and spelling. Sam also wrote one of the shorter essays of all 4th graders. Sam’s spelling was better on sight words than on non-sight words, however there were several mistakes in both categories. Unfortunately only one sample of writing was taken, which is in contrast with the recommendation of Marston (1989) who calls for three samples taken over three different days.

In order to get another perspective on Sam’s writing, some work sample assessment was completed. Two of Sam’s in-class book summaries which were written during the year were examined. On the first one (Willie Wonka), Sam wrote 77 words with 11 spelling errors, 5 capitalization errors, 3 punctuation errors and had several missing words. At times this sample was incomprehensible because of the misspelled words and missing words. On the second sample (Best Christmas Pageant Ever), Sam

wrote 89 words with 10 spelling errors, 14 capitalization errors, and no punctuation errors. Legibility was a factor on both of these summaries. It appears that when Sam has to combine the tasks of writing along with thinking about content, capitalization, punctuation and spelling, his handwriting legibility decreases significantly.

Sam was also given a sight word vocabulary test in which he correctly spelled 74/112 words (66%). Most 4th graders in Sam's class scored 90-95% on this test. Sam is scoring 72% on his in-class spelling tests, despite having a reduced list for much of the year, which ties him for the lowest score in his class.

Sam's ITBS scores in the language section would be the best estimate of his writing skills on the test. His ITBS scores for the past year are shown in Table 3. All of Sam's scores were at or below the 12th percentile (IPR), which indicate that significant skill development is needed in these areas.

Table 3

2001-2002 ITBS Language Scores

	Spelling	Capitalization	Punctuation	Usage and Expression	Language Total
IPR	12	7	2	5	2
NPR	25	19	4	14	11

Sam was also administered the Reader and Writer Self-Perception Scales by the tutor at the reading clinic. These self-perception scales indicated that Sam enjoys both reading and writing and he is more confident in his writing skills. In the interview with Sam he also indicated a desire to learn to read and write better. This is a positive sign, as motivation to learn how to read and write is a major factor for success in these areas (Stowe, 2000).

Writing data summary. All of this data provide evidence that Sam has a difficult time with written language. His fine motor skills seem to be intact, but his ability to write legibly is significantly impaired when he is doing a task other than copying. His spelling skills are low and his ability to use writing conventions such as punctuation, capitalization, organization and sentence structure is significantly below that of his peers.

Math

Sam has also struggled in math, specifically with his basic addition and subtraction facts as was noted in his cumulative file. Regrouping had also been noted as being especially troubling. Past teachers have reported Sam often employs an “I don’t get it” attitude and gives up trying before he even gets started, although it was not specified whether this is an excuse or whether Sam really didn’t understand. Sam reported that he often doesn’t understand new material presented in class and doesn’t even know where to start on some problems. When he did not understand how to do a problem, his answers often reflected a guessing response. Many times his answers were not logical for the

problem. Sam's math percentage from the first semester of 4th grade (assignments and test scores) was 67%, which was significantly lower than the next lowest score in the class (80%). There was only one missing assignment, indicating that Sam is turning in homework, however it is often not correct. Sam also scored poorly on his class tests.

Work sample evaluation was an important part of the math assessment as an evaluation of his math workbook was conducted by the evaluator. Sam seemed to have very little understanding of the processes involved in subtraction regrouping, decimal place value, and long division. His answers to many questions indicated guessing responses. His work was considered below average compared to the work of other students in the class by the evaluator.

Curriculum based assessments have also been used effectively for evaluating performance in the area of math (Idol et al., 1999). Because math is a spiraling curriculum which builds on skill sets by revisiting concepts and introducing more complex applications of these concepts, it is imperative that students have the basic skills mastered before they are built upon (Stowe, 2000). In the curriculum based approach, the skills that are most important to the classroom curriculum can be identified and assessed in a format familiar to the student. As a 4th grader, basic fact knowledge in addition, subtraction, multiplication and division are needed in order to be able to complete more complex problems such as multiple digit exercises in multiplication and division.

Sam was administered a curriculum based math assessment in a large group format with all other 4th graders at his school. The test was designed by the teachers and reflected actual problems from the curriculum being taught. The test was designed as an end-of-the-year measure, therefore most students did not do well in regards to the percent possible in the Fall administration. The students will be readministered the same assessment at the end of the year in order to monitor the progress made during the year. This was a timed test. Sam's score was the third lowest of all 4th graders, placing him at the 11th percentile. He completed very few of the problems.

Sam was also assessed with curriculum based material on an individual basis, using a mixed math sheet that combined multiple digit addition, subtraction, multiplication and division problems that the general education teacher described as similar to the review problems that are completed every day before the math lesson. Sam was given two minutes to accurately complete as many of the problems as he could. Sam averaged fewer than 7 digits correct per minute. According to Shapiro's data (1996), this places Sam in the "Frustration" level (0-19 digits correct). In order to achieve the "Instructional" level, Sam would need to complete 20-39 digits correct per minute. It was noted that Sam's accuracy was high during this assessment, however his pace was slow. Sam's lack of speed in math is an important characteristic that will need to be accounted for in his educational accommodations. This assessment will be useful in monitoring Sam's progress as the interventions are analyzed.

Because of Sam's poor performances on both curriculum based assessments, he was also assessed individually using a basic fact sheet and a mixed math fact sheet and asked to orally explain the process he was going through when completing the problems. This was not a timed assessment. The added assessment feature during this session was having Sam verbally express the processes he was going through in his mind when completing these problems. This process allowed the researcher to identify where problems were occurring during the completion of the exercises. Sam's accuracy level remained high during this untimed assessment, however the evaluator noted that Sam's solving of the problem and verbal explanation were a time consuming process.

Through the curriculum based assessments it was determined that Sam knew his basic math facts in addition, multiplication and division but subtraction facts were not near as automatic, often requiring him more time and sometimes a counting strategy using his fingers. His basic fact knowledge was often lost in the context of a larger more complex exercise. He had a good understanding of the meaning behind symbols in one digit by one digit exercises, but did not comprehend meaning of the more complex exercises. He also had difficulty transferring the steps from one type of exercise to a new exercise. Specific problems were noted in the areas of regrouping in subtraction and division exercises (Sam simply took the smaller number from the larger number regardless of where they were in the problem), decimals and place value, the steps in long division, and multiplying multiple digit numbers.

Sam's ITBS scores in the area of math give a good indication of how proficient he was in several different mathematical concepts. Sam's ITBS scores in math from this past year are shown in Table 4.

Table 4

2001-2002 ITBS Math Scores

	Concepts/Estimation	Problems/Data	Computation	Math Total
IPR	4	15	18	8
NPR	10	26	38	18

Sam did have some strengths in the area of math as well. His basic math facts were almost automatic in addition, multiplication and division. He was also is able to verbalize the relationship between multiplication and division as groups of objects. It appeared as though Sam was able to understand math concepts but may take longer and need more practice before these concepts are retained permanently.

Math data summary. Sam has a significant lack of skills in several areas of math. Although his basic facts are good, he struggles to apply them in a more complex type of problem. He needs help specifically in subtraction regrouping, decimal placement, multiplication of multiple digit numbers, and long division. He is able to grasp

mathematical concepts when given the instruction and time needed. However he may not proceed at the same pace as his peers.

Behavior

Sam's cumulative file also contained concerns about his behavior, especially being able to maintain attention and focus. It was reported that Sam had great difficulty attending to tasks for a period of time. Behavioral descriptions such as "immaturity, tattling, difficulty staying in his chair, and impulsivity" were found in teacher comments regarding Sam's behavior. Past teachers also reported personal space problems, blurting out, listening, following directions, and paying attention to detail in assignments as recurrent problems.

The general education teacher also discussed a number of the same concerns, but said he did not believe Sam has hyperactivity issues, more that he has "busy hands" which sometimes distract himself or his peers. He especially has problems keeping himself in his own personal space. However, he noted that Sam is redirectable and seems to want to follow directions and be a good student. The main concerns in the classroom at the present time are focusing and attention, keeping his hands to himself, and staying seated in his desk.

Sam's behavior is most concerning as far as how it affects his ability to learn in the classroom. He was observed on five different occasions and it was determined that Sam was off task an average of 35-50% of the time depending on the activity. Peer

comparisons indicate that his classmates were off task an average of 10-20% of class time depending on the activity. Given the research on the role of on task behavior and its link to academic performance (Shapiro, 1996), it would be reasonable to possibly link Sam's off task behavior to his delays in academic achievement. Sam worked best in a small group setting (off task up to 15%) and was off task the most during individual seatwork (off task up to 70% of the time). He did participate appropriately and his behavior did not usually result in negative peer attention. He was not observed as hyperactive, but his inattentive behavior could be contributing significantly to his lack of academic progress.

It was also noted that Sam had a difficult time judging the appropriateness of his behavior at times. The classroom has a rather relaxed discipline policy, and this could possibly have contributed to Sam's inappropriate behaviors. For instance, peers will get up to sharpen their pencils during a lesson; Sam will get up and ask the teacher a question in the middle of the lesson. He also wandered from group to group during small group activities. His behavior was not harmful or terribly distracting to other students, but may inhibit Sam's learning opportunity.

Although not diagnosed as such, the anecdotal accounts and observational records of Sam's behavior would indicate a possible diagnosis of Attention Deficit Disorder (Diagnostic Criteria from DSM-IV-TR, 2000). However because Sam's school uses an "entitled individual" identification system, this diagnosis is not necessary.

Sam has many positive behavioral aspects. Every teacher from the past had made positive comments about Sam's demeanor, his attitude, and his standing among peers in the cumulative file. He is a social person who has many friends, both in his class and outside of his class. He has not been a discipline problem in the past. The general education teacher made many positive observations about Sam being in his classroom. He described Sam as a polite and courteous young man. The evaluator has also greatly enjoyed working with Sam and admires his positive attitude towards learning and school, despite the difficulty he is having.

Behavior data summary. Sam has many positive behaviors that have been noted throughout his school career. He is positive, nice, social and polite. However he also has some behavioral issues that may be detracting from his learning capabilities. Sam does not have hyperactive features but does possess many of the characteristics of a child with Attention Deficit Disorder. His lack of self monitoring skills may prevent him from staying focused and could be contributing to lack of academic skill development.

Intelligence Testing

As part of his evaluation, Sam was administered the Wechsler Intelligence Scale for Children-III (Wechsler, 1991). The WISC-III is a standardized measure of general intellectual ability which can be useful in "psychoeducational assessment as part of educational planning and placement for school-aged children" (Wechsler, 1991, p. 7). The test itself is made up of thirteen different subtests which are hypothesized to reflect the

child's general intellectual ability. Examining a child's scores on the individual subtests can be valuable to identify strengths and weaknesses in specific intellectual areas.

The main reason behind the administration of the WISC-III was to examine Sam's intellectual ability as compared to his lack of achievement in educational settings.

Attentional difficulties can interfere with the educational process and assessments of academic functioning must be considered to evaluate how much the behaviors may be detracting from educational opportunity. The test was given in order to test a low cognitive ability hypothesis. The WISC-III administration was also important in order to assess a hypothesized difference between his verbal ability and his perceptual ability. It has been proposed in the past that a significant split in the Verbal and Performance Scales is indicative of a Learning Disability (Sattler, 2001), although this view has received a great deal of criticism in recent research (Berninger, 2001). A significant split between Verbal Scale and Performance Scale could lead to important implications when planning instructional objectives. The team also felt it would be valuable to have a better idea of where strengths and weaknesses were in Sam's intellectual functioning.

Although there has been much controversy over the last 20 years as to the usefulness of IQ scores, they can still be used as an integral part of a child's educational evaluation. The scores on the WISC-III allow us to examine strengths and weaknesses in different areas, inequalities in cognitive development areas, and general abilities regarding future information acquisition (Sattler, 2001). Despite many shortcomings, the WISC-III

is still widely used in schools and is an important source of assessment information, as it gives a reasonably accurate picture of the child's intellectual functioning. Sam's scaled scores according to his age level are presented in Table 5.

Sattler (2001) describes possible implications for both above average and below average scores for each subtest. A score between 8 and 12 on any subtest would be considered within the average range. Sam scored within the average range on many of the subtests, however he scored above average in the areas of Picture Completion, Picture Arrangement, and Comprehension. His score in Picture Completion indicates good perception skills and the ability to attend to detail. His score in Picture Arrangement indicates good sequential thought processes, good ability to synthesize parts into a whole and good planning ability. His score in Comprehension indicates good social judgment and common sense, the knowledge of rules of conventional behavior and the ability to organize knowledge.

Sam scored below average in the areas of Arithmetic and Digit Span. His score in Arithmetic indicates a possible inadequate ability in mental arithmetic, poor concentration, distractibility, or blocking toward mathematical skills. His score on Digit Span indicates possible inattention difficulties, distractibility, a possible learning deficit, difficulty in auditory sequential processing, or poor short-term auditory memory.

Table 5

WISC-III Subtest Scaled Scores

Subtest	Score
Picture Completion	14
Information	12
Coding	10
Similarities	11
Picture Arrangement	12
Arithmetic	1
Block Design	11
Vocabulary	9
Object Assembly	9
Comprehension	13
Symbol Search	11
Digit Span	7

The evaluator thought it would be beneficial to have another session with Sam and to readminister the Digit Span and Arithmetic tests in nonstandardized conditions to try to identify why the scores obtained were below average. Sam was readministered the Digit Span subtest and scores were similar to the previously obtained scores. A chunking method was reviewed with Sam in order to determine if the problem occurred in his strategy or some other auditory/mental process. Sam was able to complete a higher level on the Digit Span subtest after the chunking method was presented to him, although he still made some mistakes when trying to recall more than 5 numbers. Mistakes resembled reversed number sequences or numbers left out completely. This strategy was supplied to determine if Sam could recall a larger set of numbers with a strategy other than the one he used during the test administration.

Sam was also readministered orally read Arithmetic problems. Sam still struggled greatly with these oral problems, but fared slightly better when he was allowed to write down the numbers in each problem on a sheet of paper. He also struggled with what operation to use in the problems and still came up with the incorrect answer on two of the four administered questions.

Index scores combine different subtest scores to give a more general picture of several aspects of intelligence. The IQ Index provides a scaled score for each index. The percentile rank provides information as to where Sam's scores rank amongst the WISC-III normative sample. The 95% Confidence Interval (CI) provides a range of scores that are

statistically calculated to include Sam's actual score 95% of the time if Sam were to be readministered the WISC-III. Sam's Index scores are presented in Table 6.

Table 6

WISC-III Index Scores

Index	Index IQ	Percentile Rank	95% CI
Full Scale IQ	102	55	96-108
Verbal IQ	95	37	89-101
Performance IQ	108	70	99-115
Verbal Comprehension	93	32	87-100
Perceptual Organization	110	75	101-117
Freedom from Distractibility	67	<1	62-81
Processing Speed	104	61	94-113

Sattler (2001) also provides an interpretation of index scores. Sam's Full Scale IQ Index is the best measure of his general intelligence. His score of 102 places him in the average range. The Verbal Index measures verbal comprehension, ability to process verbal information and his ability to think with words. The Performance Index measures

perceptual organization, the ability to think in visual images, nonverbal ability and the ability to form abstract concepts without the use of words. Sam's scores on both the Verbal and Performance Indexes are in the average range.

The 13 point difference between Sam's Verbal and Performance Indexes is significant at the .05 level for his age group (Wechsler, 1991). There are a number of possibilities for this discrepancy, including: (a) performance skills being better developed than verbal skills, (b) visual-motor discrimination skills being better developed than auditory-vocal processing skills, (c) difficulty with verbal tasks, (d) possible language deficits, or (e) cultural differences (Sattler, 2001). This difference could also be due to the low score achieved on the Arithmetic subtest and these data could have skewed the entire Verbal Index score. Almost all of the other Performance subtest scores were comparable to the Verbal scores. The score on the Arithmetic subtest should be considered an outlier which skewed the Verbal Index Score. Because both the Verbal Index and Performance Index fall into the average range, this discrepancy is probably a reflection of more advanced performance skills than verbal skills.

Sam's scores on the other indices fall into the average range except for the Freedom from Distractibility Scale. Low scores on this index could indicate difficulty in sustaining attention, distractibility, anxiety, short-term retention deficits, encoding difficulties, or inadequate self monitoring skills. However, because the Freedom from Distractibility index loads heavily on the Arithmetic subtest, this score is not necessarily

representative because of Sam's low score on the Arithmetic subtest. His underdeveloped arithmetic skills could have led to the low score on the Arithmetic subtest, thereby skewing the Freedom from Distractibility Index score. The evaluator's conclusion is that Sam does struggle with his arithmetic and has trouble doing mathematical problems in his head. However, it is the opinion of the evaluator that the arithmetic score was an inaccurate measure of Sam's mathematical ability and skewed some of the results of this assessment, most notable the Freedom from Distractibility Index.

IQ testing summary. Sam's WISC-III results indicate that he has normal overall intelligence, in both verbal and performance areas. His lowest subtest score was on Arithmetic, which required him to solve math problems and perform mental calculations. His highest score was on Picture Completion, which required Sam to find missing parts of an otherwise complete picture. There was a Verbal-Performance split that was statistically significant, however because both verbal and performance scores were in the average range, this would not be considered practically significant. The important information from this test is that Sam has normal intellectual functioning and he has normal intellectual abilities.

Timeline Perspective

A referral process works in a linear fashion. As new information is discovered and integrated, new hypotheses are constructed and old hypotheses are either rejected or

strengthened. Because of this linear fashion, it is valuable to review Sam's evaluation process from start to its current position. This information is presented after the data has been discussed above so the reader can follow along with the evaluator's thought processes.

Sam's referral was written in November by the general education teacher. The referral process called attention to Sam's poor academic work, especially in the areas of reading, writing, spelling and math. The general education teacher was also concerned about Sam's attentional behavior. The evaluator began working on the case soon after the students returned from Winter Break.

At the start of the evaluation process, two general hypotheses were developed in accordance with the referral information. One hypothesis dealt with a possible learning disability characterization in which one or more processing difficulties accounted for Sam's educational difficulties. The other hypothesis was that Sam's behavior was distracting him from being able to concentrate in the classroom, therefore reducing his possibilities for educational attainment. It may be the case that one of these hypotheses is correct, that both hypotheses are affecting Sam's educational success or that neither hypothesis explains Sam's academic difficulties.

On January 16th, reviews of Sam's cumulative and problem solving files were completed. The cumulative file contained many of the same difficulties described in the referral. Sam had not been referred for special education evaluation before, but academic

problems and interventions had been noted for almost every year. His ITBS scores were also in the cumulative file. Reading data was available from the reading clinic and it was determined that because these reading scores were less than six months old, they would be adequate for helping to determine Sam's reading level. The problem solving file revealed that a problem solving meeting had taken place in November and several accommodations were put in place including: sitting Sam near the front of the room, shortening his spelling list, having a homework folder he takes home daily and having him in a small reading group in the general education classroom led by the special education teacher. At the time of the referral for special education evaluation, the problems noted earlier were still present and not rapidly improving.

An interview with the general education teacher was also completed on January 16th. He described Sam's educational difficulties more in-depth and was able to give examples of probable undeveloped skill sets in each area. He also described Sam's behavior in the classroom, noting that hyperactivity was not an issue, but staying on task was difficult for Sam. The general education teacher also described the accommodations more thoroughly. It was agreed that some observations would take place to give the evaluator a better understanding of Sam's behavior problems. Also during this interview, Sam's grades and scores for math and spelling were collected, as well as his scores on a math curriculum based assessment and a writing story starter that were given earlier in the year.

The evaluator felt observing Sam before meeting with him was important so Sam's behavior would not be affected. Five observations were completed from January 22nd through January 30th in order to get an idea of how off task Sam was during academic activities. Only one of the behavioral observations conducted was deemed to be unrepresentative of Sam's normal classroom behavior (while the class was watching a movie).

When observations were completed, the evaluator began meeting with Sam weekly to conduct the assessment process. Because reading the most troubling issue and reading clinic QRI-3 scores also indicated this as an area of difficulty, reading was the first problem addressed. Starting on January 30th and over the next week Sam was given two or three one page passages at his grade level to read. It was determined that the QRI-3 scores reflected a fairly accurate description of Sam's reading level due to his low performance on the curriculum based passages, however not as low as the reading clinics QRI-3 scores. Sam also read out of his reading book for two of the assessments. Due to the observation of Sam's oral reading and his struggles with sounding out new words, a more specific hypothesis was developed that his phonemic awareness abilities were low. It was also hypothesized that this may account for his lack of spelling skills. Sam's mom was also interviewed during this time.

On February 6th, a thorough examination of Sam's permanent products was completed in several academic areas. Spelling data were gathered and his sight word

spelling test was reviewed. Reviewing this material strengthened the hypothesis that Sam has little phonemic awareness because of the types of mistakes that were made. His writing skills were also examined on two in-class writing assignments. Writing mechanics were very poor and his written expression was also poor. Words were left out or added for no reason and at times the assignment was incomprehensible. Spelling was also poor, with many misspelled words. Sam's math workbook was also examined. New concept material was either incomplete or seemed to reflect guessing, as his answers made no logical sense to the evaluator. It was determined that math was an area that needed more assessment.

At this point, there were three main hypotheses the evaluator was working with. The first hypothesis was that Sam's inattention was contributing to his lack of academic performance. It was hypothesized that if Sam was not able to pay attention in class, he was not able to learn the material being presented and therefore was not having academic success. The second hypothesis was that Sam has a learning disability that was preventing him from being able to obtain success on academic work. This hypothesis also included the idea that Sam's inattention was caused by boredom or frustration at not being able to complete the assignments asked of him. With the information gathered thus far, a new hypothesis was also being considered. The third hypothesis dealt with a specific difficulty in reading, which leads to problems in other areas. It was hypothesized that Sam had little phonemic awareness, which was contributing to his lack of

achievement in all other academic areas. This was accounted for by the reading-based math curriculum in which someone with a reading difficulty would be more likely to struggle. These three hypotheses could account for Sam's intelligence-achievement discrepancy on an individual basis or it could be a combination of one, two or more of these things working together.

The evaluator, being aware of his own lack of knowledge in the area of reading and writing, employed the help of the elementary special education teacher on February 13th. The data were presented and the special education teacher reviewed her thoughts on Sam's reading, having been working with him all year in a small group setting. Her anecdotal records disagreed somewhat with the data gathered. However, her data did indicate Sam could benefit and was in need of remedial reading instruction. Therefore this part of the evaluation was concluded and the data were organized to be presented at the entitlement meeting. The special education teacher was the most concerned about Sam's writing. The evaluator presented the evidence that had been gathered from work samples and spelling tests and the special education teacher also had further evidence to support the need for special education in the area of writing. Combining the data gathered from work samples and Sam's curriculum based story starter writing assessment, it was determined that Sam would be eligible for special education help in writing also. Therefore the evidence was organized and prepared for the entitlement meeting and the need for further evaluation in these areas was rejected.

The need for math instruction was still not clear. Therefore it was determined that more assessment needed to be conducted. On February 13th, Sam was given a basic math fact sheet based on a hypothesis that he did not know the basic skills required to complete more complex problems. Sam was able to complete these with no difficulty except for taking more time with subtraction than with the other types of problems, therefore this hypothesis was rejected. He was also assessed with timed mixed math curriculum based assessments in which he scored in the “Frustration” level on grade level material. After discussing the results with his supervisor, the evaluator returned on February 20th, to administer a very similar mixed math sheet and had Sam verbalize his thought processes orally. This proved to be a difficult task for Sam and a pattern of not knowing the steps for more complicated problems became evident. Undeveloped skills in certain areas began to appear repeatedly and these problems were recorded. All evidence for a need for mathematical support was combined and it was the evaluator’s recommendation to the team that Sam needed remedial math instruction due to his lack of application of math facts into more complex problems and his inability to solve problems that his peers could solve with little difficulty. Sam was also interviewed informally on this date as to his thoughts concerning special education and his difficulties in school.

An entitlement meeting was held for Sam on March 6th. Present were: Sam’s mother, the school psychologist, the support services coordinator, the general education teacher and the special education teacher. Despite the “entitled individual” system at

place at Sam's school, the hypotheses were presented at this meeting. After presenting data for each academic area, it was determined by the team there were four appropriate need areas for which goals would be written: (a) writing, (b) reading, (c) math and (d) behavior. Sam's mother was supportive of the team's assessment and Sam was entitled for special education services. Sam's school is a noncategorical system, therefore it was unnecessary to label Sam with a specific type of disability. He is considered an "entitled individual" and will receive special education under this designation. The specific goals identified were:

In one year, Sam will edit his writing in capitalization, end punctuation and spelling with 80% accuracy on regular classroom assignments.

This goal will be monitored by the special education teacher using task analysis of writing to figure a percentage of accuracy.

In one year Sam will read regular classroom books with at least 90% accuracy.

This goal will be monitored by the special education teacher using a running record of oral reading.

In one year Sam will average 70% or higher in his math curriculum.

This goal will be monitored by the regular classroom teacher using scores on tests and daily assignments.

In one year Sam will be on task 80% of the rating period for 4 out of 5 days.

This goal will be monitored by the general education teacher and the special education teacher with the help of the school psychologist using a self-monitoring system designed by the school psychologist.

Instructional Recommendations

The nature of the data gathered during the evaluation process allows it to be used effectively to both recommend instructional interventions as well as adequately monitor progress from the baseline levels obtained. This is one of the distinct advantages of using curriculum based assessment procedures and an intentional act on the part of the evaluator and the special education teacher. The special education teacher was responsible for the academic interventions while the evaluator was responsible for designing an intervention to help Sam monitor his behavior in the classroom.

Academic Intervention

Following the entitlement meeting an interview was conducted with the special education teacher in order to understand the teaching strategies she will be using and how progress will be monitored. Sam will be pulled from class along with another student for 30 minutes every day until a good rapport is built and she can identify motivating factors. Also during this time the special education teacher can determine the severity of the skill needs. At this point, the instruction will then be carried into the regular education classroom, but this probably won't start until the following school year.

The special education teacher has been teaching a resource program for 20 years, the last 17 of which have been at the K-6 level in Sam's school. She is a great believer in co-teaching students in the general education classroom and spends approximately 70% of her school day doing this. Co-teaching in the general education classroom has been an emphasis in her practice for the last 13 years. She has an eclectic teaching style, meaning that she uses what works for an individual student rather than adhering to a particular teaching style. She has completed research in the past in the areas of Attention Deficit Disorder, active learning, and reading and writing for all ages of students. Recently she has begun to research technology and how it can be used in the classroom to further education for resource students as well as general education students.

Based on her own research and review of relevant literature, the special education teacher breaks schooling down into four component parts: (a) home, (b) student, (c) school, and (d) medication. The two aspects that are most appropriate to work with for Sam's program at the current time are the student and the school. The school aspect would be Sam's special education program and the environment in the general education classroom which would be all of the academic interventions that will be used, the accommodations the general education teacher is using in the classroom, and also involves helping Sam to feel successful at school and keeping his motivation high.

For the student, the main focus for Sam will be his behavior, in particular, understanding his attention. There are a number of ways in which this is accomplished.

First, a behavioral intervention will be put in place (see Appendix). A second way is through a self monitoring system designed by the special education teacher called LAWS (Look, Ask and Answer, Work Done, and Set Goals). This is a system which was introduced to Sam's entire class before he was entitled and will be continued in his special education. Each aspect was presented during a lesson taught by the special education teacher in the general education classroom. "Look" reminds students to keep their attention focused on the task at hand or to look and listen to the speaker. "Ask and Answer" reminds students to ask questions when they don't understand and encourages volunteering of answers during class discussions. "Work Done" reminds students to review assignments for completeness and to check the assignment off when it is complete. This step involves the aspects of self-talk, time management, blocking out distractions, and reviewing consequences. "Set Goals" helps students to set a goal and monitor their progress on this goal. This step goes together with the "Work Done" step in order to visually see what needs to be accomplished and to physically check it off when it is complete. All the students receive a self-monitoring sheet designed around the system which they use to evaluate their success.

Specifically for reading, the special education teacher has started by focusing on the structure of a story. She has determined that Sam's comprehension is actually poorer than originally assessed. During their pull-out time, Sam and a peer have been learning to dissect a story into its components, which will in turn lead to higher comprehension. She

is also working on a lesson that Sam and this peer will be teaching to the rest of the class, which helps focus on Sam's verbal skills and his need for positive attention. She believes his fluency and reading rate are adequate for the time being and thinks instruction needs to focus more on the meaning behind the words. This instruction will continue until she feels Sam is ready to receive the instruction in the general education classroom.

Specifically for writing, the focus is on mechanics such as capitalization and punctuation. The general education classroom students have to write a summary for every book they read and the special education teacher has taken this opportunity to link the reading and writing components of Sam's instruction. She can work with him on comprehension and then work on his writing skills with the summary. This will be accomplished through direct instruction techniques.

Sam has goals in a variety of different academic areas which makes it difficult to find the time during the day to work on all aspects of his academic instruction. When this happens, priorities need to get the most attention while other developing skills are put on hold. This was the case with math. The problem solving team determined behavior, reading and writing as the important focuses for Sam currently. Math will be worked on with Sam as the need arises and the holes in his skills will be filled as the curriculum continues. He will still be receiving math instruction, however it will not be as often or as intense as with the other goal areas. Math instruction will be given at appropriate times as determined by the general education teacher and the special education teacher.

The general plan for Sam is to assess his skills and try to catch him up as quickly as possible in the pull-out sessions. The special education teacher does place a major emphasis on teaching in the general education classroom, therefore she will try to get Sam to a point where he will be successful in the general education classroom as soon as possible (probably early next year). Some of the teaching strategies she will be using are direct teaching, teacher modeling, peer modeling, having Sam help teach a lesson to the general education class, limiting his speaking to a predetermined number of sentences on a certain subject to help him focus his thoughts, do as many hands on lessons as possible to help keep his concentration, and designing instruction to help him focus on his strengths. A variety of different teaching styles will keep Sam interested and improve the chances of finding a technique with which he is highly successful.

To monitor these goals, the special education teacher has a system which she feels has been highly successful for students in the past. On the bulletin board in her room she has students make a flower from construction paper and on each leaf is a goal for the month for them to accomplish in a specific area. When each goal is accomplished, she takes a digital picture of them next to the goal and sends the picture home with a comment from both her and the student. This allows the student to receive recognition and praise for the accomplishment and fosters communication between the school and the parents of the child. Each goal is monitored on a sheet of paper that specifically addresses all IEP goal areas. This system allows for the special education teacher to closely monitor goals,

for the student to visually see their goals and for the parents to get involved in the education process.

Progress monitoring. An interview was conducted with the special education teacher on 05/21/02 to review Sam's educational program and to look at his progress before the end of the school year. Sam had been receiving special education instruction for approximately two months at the time of the interview. The interview was conducted in an informal format, with no preset list of questions, rather the special education teacher described what she had been doing with Sam thus far and reported data when it was collected.

The main focus of instruction thus far had been on reading and writing. In the individual one-to-one instruction time, they had been working on story structure, how to look for main points in a story, and how to block out distractions and focus attention on the reading. This included contrived situations in which Sam had to make choices in the classroom as to where he thought he could be most successful maintaining focus for reading and learning strategies to block out distractions (such as moving to another place, turning his body, or asking others to not distract him).

There have also been accommodations made in the classroom. These accommodations include having books put on tape for Sam to read along with, a structured study guide completed on a nightly basis to help him stay in tune with the story, and a computer program that allows him to work on homework on the computer

which is highly motivating for him. All parties involved, including Sam, feel these accommodations have been helpful.

Sam also participated in a reading study conducted in his school. This study called for Sam to read a one page passage orally (with no time limit) while his mistakes were recorded. The next day he was given the same passage to read again and his mistakes were recorded again. Sam read with 93% accuracy the first day and his accuracy improved only 1% to the next day, meaning that rereading the passage with no help on how to pronounce words did not help with his accuracy to any significant degree. For the next part of the study, Sam was allowed to read a new one page passage using a reading pen in which he can scan the word and have it pronounced for him. He used the pen six times for the first reading of the passage, and was able to pronounce all of these words correctly (his accuracy rate for the reading was 97%). The next day, he was given the same passage and was able to read at 98% accuracy, including all six words scanned the day before, without using the reading pen once. The overall rise in accuracy rate was attributed to extraneous factors, however the retention rate for the words that were scanned was 100%, showing that Sam could use this device accurately and successfully. It is planned for him to continue using this tool into the 5th grade.

Sam was administered the QRI-3 again by the special education teacher just before the end of the year to monitor his progress thus far. Her results indicated that Sam was in the independent range for both accuracy and comprehension on 4th grade material, which

is a dramatic increase from the data gathered by the reading clinic. When asked about this increase, the special education teacher felt the data from the reading clinic was inaccurate. She felt Sam was reading at the 3rd grade level at the beginning of the year and has made vast improvements throughout the year. Despite these improvements, the special education teacher still felt Sam would struggle with classroom grade level material due to his attention difficulties, but felt the accommodations will allow him to be more successful in the next year.

Writing has also been an area that has received a lot of attention during the one-to-one instruction time. Sam has been working on writing fundamentals, such as capitalization and punctuation, and how to write the main ideas of a story into a summary. On his last story summary, Sam's capitalization was at 94%, his punctuation was at 89% and his spelling was at 95%, all of which are vast improvements over his previous assignments.

The special education teacher still felt Sam had gaps in his phonics knowledge, which will continue to provide difficulty with spelling and reading. This is an area that is being worked on, but is going more slowly. They also worked on syllable division and Sam learned the rules but had yet to apply them. Math has been worked on only sparingly thus far.

Overall, Sam's special education teacher felt Sam had made significant progress in the two months before the end of the school year. He will obviously need to continue

with his special education goals into next year, but the progress was encouraging. The summer presents a problem, as Sam will be spending it with his dad and grandparents away from his hometown. The special education teacher has prepared a wide variety of activities for Sam to take with him to continue working on throughout the summer. The activities will help keep Sam's skills intact over the summer so he will be ready to continue to progress at the beginning of the next year.

Behavioral Intervention

Through the interview process, the observations conducted in Sam's class, and with the research confirming the link between on task behavior and academic success, it was determined by the team that on task behavior would need to be addressed in the behavioral intervention. The general education teacher also specifically mentioned three other behavioral issues: keeping hands to himself, sitting in his chair appropriately and blurting out. It was decided that a self monitoring system would work efficiently for Sam, as he had demonstrated in an all-class intervention several weeks prior that he could self monitor both accurately and effectively. It was because of this information and the nature of the problem behaviors that the specific intervention was developed.

There have been a great deal of studies conducted with the focus on improved attention or on task behavior. Shapiro and Cole (1994) described three studies with basically the same procedures which resulted in improved attention among subjects. The basic format of these studies involved a subject or a number of subjects who had an

extraneous reminder, such as an audible beep, go off at varied intervals and then the subject asked himself or herself “Am I on task?” This was then recorded as a yes/no choice on a recording sheet and at the end of the day the percentage of time on task was figured (Hallahan, Lloyd, Kneedler, & Marshall, 1982; Hallahan, Marshall, & Lloyd, 1981; Hughes & Hendrickson, 1987). A study similar to those described was also completed with students who were learning disabled (Prater, Joy, Chilman, Temple, & Miller, 1991). This study was of interest because Sam displays characteristics of a learning disabled student. Research has shown that interventions of this type are successful with subjects across many different ages with many different behavioral problems and can be implemented in a variety of ways (Shapiro & Cole, 1994).

The school psychologist determined that an intervention of this type would be both appropriate and successful for Sam in the regular education classroom. It was decided that the behaviors of on task, keeping hands to oneself and sitting appropriately in his seat were relatively concrete behaviors that could be monitored easily by Sam. The goal is to have the self monitoring not interfere with academic work, otherwise the intervention is detracting from the very thing it is supposed to be improving. The behavior of blurting out was deemed too difficult to monitor in this particular intervention, therefore the general education teacher will continue to use verbal reminders to curb this behavior. Perhaps if the self monitoring intervention is successful, this behavior can be revisited.

The intervention will use the same basic format as the interventions described by Shapiro and Cole (1994). Sam will receive an external device (to be discussed shortly) that will alert him to monitor the three behaviors described at a determined interval. He will then ask himself about these three behaviors and record his progress. Monitoring three behaviors may be difficult, however it was determined that because two of the behaviors are so concrete (in seat and hands to self), this would not be a problem. The behaviors will be monitored throughout the day in the general education classroom and running total for the day will be kept. At the end of each day, Sam and the general education teacher will monitor progress for all three behaviors on bar-type graphs supplied by the school psychologist (see Appendix A for complete intervention materials). This will allow an easily-interpreted visual indication of the progress being made. This intervention system was reviewed with both the general education teacher and Sam's mom at his school conferences. It was agreed that minor changes could be made, if needed to ensure the success of the intervention, without parent notification.

The external device used to help Sam self monitor his behavior is called the WatchMinder. This is a device very similar to a wristwatch that can be set to vibrate for 2 seconds at predetermined intervals or at random intervals. It can also be worn wrapped around the ankle or similar to a beeper. Sam chose to wear the device like a beeper attached to his pocket. It was decided by the general education teacher that the WatchMinder should be set for 5 minute intervals to start out. Sam was given a set of

rules that pertain to the watch as well as concrete definitions of the three behaviors (see Appendix) to have at all times in the general education classroom. The recording sheet is a three column sheet with each column having a specific behavior listed at the top. When the WatchMinder goes off, Sam marks down in each column an X or an O (this was his choice of markings) as to whether or not he was performing the behavior appropriately. The chart was adapted from Shapiro (1988, p. 213).

A self monitoring system such as this is easy to implement with a contingency based system to reward success and punish failure. However, research has also shown that self monitoring behavior is often times reactive and that students get reinforcement from themselves by improving on the target behavior or behaviors (Shapiro & Cole, 1994). It was decided by the team that no positive or negative contingency would be implemented at the onset of the intervention. There was some worry about Sam using the WatchMinder inappropriately or to attract attention, however this was discussed with Sam and it was decided that a punishment system could be implemented later if it became a problem. No punishment system would be implemented immediately. Being able to see his progress on the graphs and receiving informal praise from both Sam's teacher and mother would constitute the positive reinforcement for Sam because he finds it enjoyable.

Data gathered concerning on task behavior during observations will be used as a baseline for monitoring Sam's progress. Data were not collected on the behaviors of keeping hands to oneself and being in his seat and it was deemed inappropriate to do more

observations as Sam is aware of the school psychologist's presence and his behavior would invariably change. Progress will be monitored daily by the general education teacher and collected weekly and graphed by the school psychologist.

Progress monitoring. Baseline data indicate that Sam was off task up to 70% of class time. The Watchminder portion of the intervention was run for a period of three weeks, starting on March 11th and was discontinued on April 12th. One week during this period was the school's spring break and therefore no data were gathered during the week.

Unfortunately, the researcher had not planned how to gather data after the intervention was implemented. An observation was not possible as Sam's behavior would change with the researcher in the room. Another observer would create interrater reliability problems as the new observer may score behaviors differently than the researcher. It was decided that an informal interview of the general education teacher would have to serve as the data to be compared to the self monitoring data from the intervention. Anecdotal accounts of Sam's behavior before and after the intervention would be taken in order to monitor progress. Although this is not an objective measure, it is believed the general education teacher would be able to provide enough information to determine the relative success of the intervention.

The data gathered suggested that Sam's behavior became more on task with the implementation of the intervention. The results of the self monitoring are presented in Table 7 and in Figure 1.

Table 7

Results of Watchminder Invention

Date	On Task%	In Seat %	Hands to Self %
3/11	75	85	95
3/12	90	85	100
3/13	90	85	90
3/14	100	100	100
3/15	100	100	100
3/25	100	95	100
3/26	90	90	90
3/27	100	100	100
3/28	80	60	80
3/29	100	100	100
4/1	92	86	100
4/2	100	100	100
4/3	100	100	100
4/4	100	100	100
4/5	100	100	100

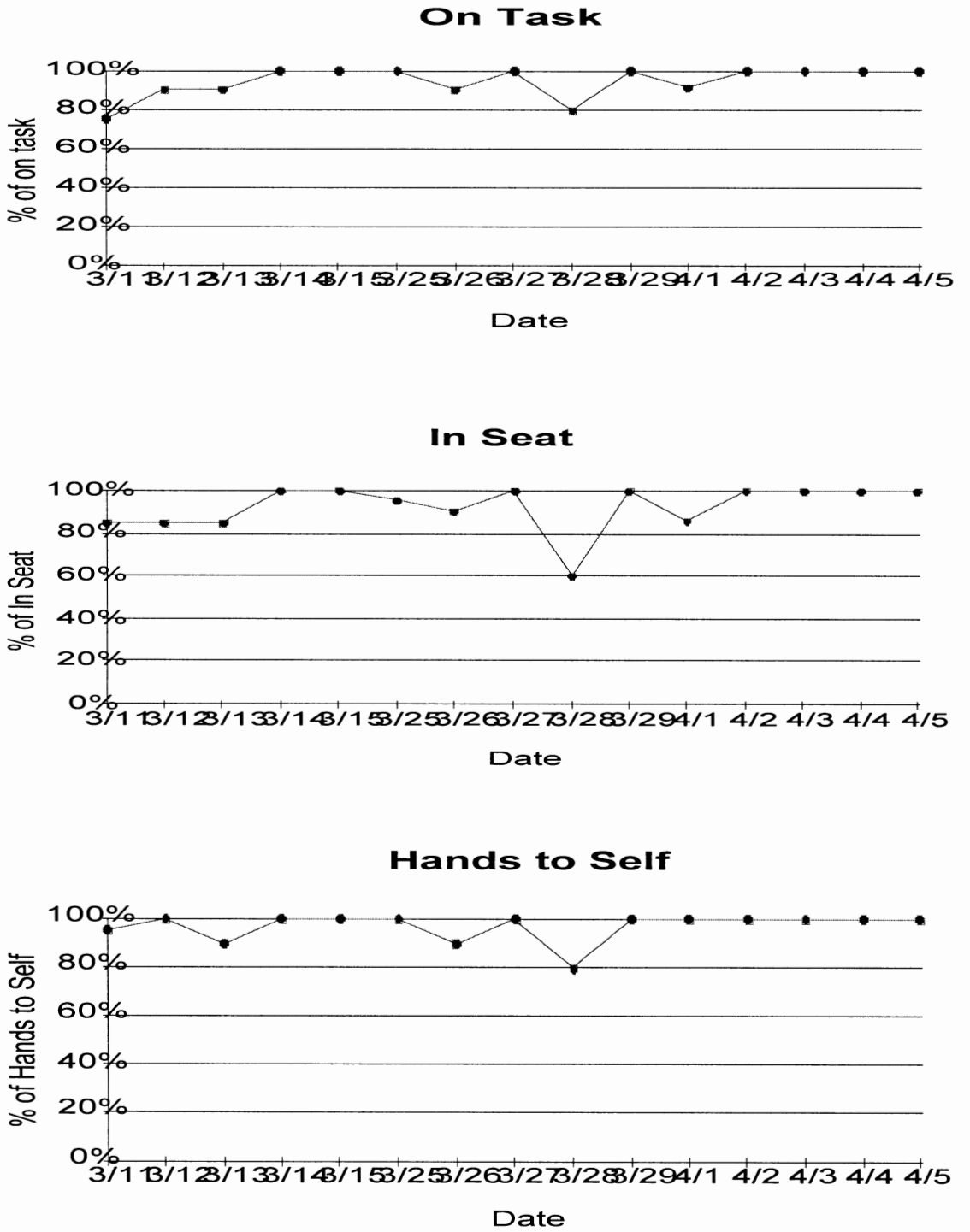


Figure 1. Results from the Watchminder intervention.

The data seem to indicate that Sam's behavior in all three behavioral areas improved over the course of the intervention. Upon reviewing the data with the general education teacher, he seemed to think that perhaps the charts overestimated the progress made during the intervention. He felt Sam did not mark down his behavior accurately for parts of the intervention. Specifically, the general education teacher felt Sam's off task behavior was lower than Sam recorded on several days. This was an anticipated problem the researcher allowed for by interviewing the general education teacher before the intervention began and again after it was completed to determine anecdotal accounts of Sam's behavior.

The general education teacher did indicate he felt Sam's self awareness of his own behavior had improved. He felt Sam was able to identify when he was off task, even if he was not able to record accurately. The general education teacher felt the intervention was successful in regards to Sam learning to self monitor his behavior, but was not convinced the data were accurate as reported in the charts above. Although the general education teacher's anecdotal accounts of the improved behavior are highly subjective, his daily interaction with Sam and his purposeful observation of Sam's behavior led the researcher to believe the intervention was somewhat successful.

Sam felt the intervention was a big success. He felt he had recorded his behavior accurately and that he was able to determine his off task behavior much more easily and correct it without being redirected by the teacher. Sam specified that he really enjoyed

the graphing aspect of the intervention. His view of his behavior disagreed somewhat with the general education teacher's view, however both identified the increased ability to monitor his behavior better and more consistently.

The behavioral intervention was discontinued after April 12th. The general education teacher was interviewed on April 24th to determine Sam's success at generalizing his self monitoring behavior without the aid of the Watchminder. The teacher described Sam's current behavior as somewhat similar to his behavior before the intervention was implemented. Since the discontinuing of the intervention, Sam's behavior had slowly deteriorated. His teacher felt Sam's behavior was slightly better than it was before the intervention, but many of the same problems (being off task, touching others) resurfaced with the discontinuing of the intervention however to a lesser degree.

Sam's teacher did feel there were some benefits to the intervention. He continued to see that Sam's self awareness of his behavior had increased, despite not always exhibiting appropriate behavior. Sam's teacher also felt Sam was more responsive to verbal cueing, when using the same language that was included in the intervention (such as "on task" and "hands to yourself"). He felt Sam's new ability to monitor his own behavior would become more beneficial when Sam has matured and is able to understand appropriate classroom behavior. A plan which would include having Sam use the Watchminder for an hour in the morning to "refresh" his concentration was discussed but not implemented because Sam's teacher did not feel Sam needed this procedure. Sam's

teacher will continue using verbal cues to remind Sam to monitor his behavior for the next month when school is dismissed for the summer.

CHAPTER 3

SUMMARY AND CONCLUSIONS

Conclusions

Although an evaluation of student's academic needs is an ongoing process, Sam's special education entitlement evaluation was quite comprehensive and the evaluation team feels all of his needs at the time were identified. His skills were examined in many different academic and behavioral areas and data were gathered using multiple forms of assessments. It is the conclusion of the members of Sam's evaluation team and of this researcher that special education was the appropriate choice of intervention for Sam. Based upon data collected during the evaluation process, it was determined that Sam's learning in the general education classroom was inadequate and that more intensive instruction was needed. It is also the belief of the team that the focus on improving Sam's language skills, such as reading and writing, may help alleviate academic problems in later grades. Reading is an essential skill needed for classes such as social studies and science. With poor reading skills, it is inevitable that Sam would struggle with these classes also. Early intervention has been shown to be effective and although Sam is a 4th grader, he will still benefit from the more intensive instruction in language before he is introduced to other academic classes.

The behavioral intervention implemented as a result of the assessment provided mixed results. Upon examining Sam's self monitoring data, it was found that he rated his

behavior as positive in all three behavioral categories for almost all of the intervals every day of the intervention. The researcher feels the chances of a behavior change this large is highly unlikely and this feeling was echoed in the anecdotal reports from the general education teacher. Unfortunately, it must be concluded the researcher had not planned an effective way to gather quantitative data after the intervention was in place to compare to the baseline observations conducted. Because Sam is aware of the researcher's presence, observations of his behavior could not be completed due to the behavior change that would likely occur when the researcher entered the room. Having another researcher conduct an observation would have introduced questions of interrater reliability. Therefore, the researcher was forced to rely on the anecdotal data gathered during interviews with the general education teacher. The overall result of the Watchminder intervention according to the general education teacher was an increase in Sam's self-awareness of his behavior. Even though Sam's behavior was not always appropriate when compared with his peers, the general education teacher did feel this intervention helped Sam become aware of the differences between his behavior and the behavior of his peers. As Sam continues to monitor his behavior and the behavior of his peers, it is hypothesized that he will continue to learn more appropriate classroom behaviors. If this hypothesis is not substantiated, a special education objective may be to teach him behaviors that will allow him to behave more appropriately in the classroom.

The academic interventions that were put in place will not be able to be fully monitored until next year due to the small amount of time left before students have summer vacation, although the preliminary results have been positive. Thus far, the special education teacher reports that a good rapport has been built with Sam and he is becoming more successful in several different academic areas. Sam is a very active and eager learner in the 30 minute pull-out sessions they have every day. Continued evaluation of Sam's skills is also a priority for the special education teacher so she can adapt her instructional objectives to the 5th grade curriculum Sam will be learning next year. The progress that has been made in increasing Sam's confidence in his academic abilities since his entitlement are a good indication of the success he will achieve next year.

Findings That Have Benefited the Child Studied

As a result of the in-depth analysis of Sam and his scholastic skills, many positive outcomes for his educational future were discovered. Behaviorally, his increased ability to monitor his classroom behavior may help him stay out of trouble and increase his self esteem because he will not always have to be redirected. Sam mentioned in the interview that he doesn't like to have the teacher watching him or telling him to sit down and get busy. As he becomes more proficient at monitoring his own behavior, the redirections from teachers will decrease. Self monitoring will also be valuable to Sam as his behavior could be detracting from the time he has to learn in the classroom. When his behavior is

more under control and his concentration is focused, he will spend more time learning and developing his academic skills.

Another important finding that stems from the behavioral intervention is Sam's increased motivation when graphing his progress. Sam enjoyed both the one-to-one attention and being able to see his progress as the intervention continued. This graphing was done with both the general education teacher and the researcher. Sam responded well to the graphing process and verbalized his desire to get 100% for each graph. Whereas this may have skewed the data in the self-monitoring system used, in a system such as graphing scores on tests, this information could be highly motivating. Sam's special education teacher has incorporated a graphing-like system into her progress monitoring and it could be valuable for Sam's general education teacher for next year to look into opportunities for Sam to graph his progress.

Academically, a benefit for Sam has been the explicit identification of instructional methods in which he learns the best. During the evaluation and subsequent time with the special education teacher, it was determined that Sam learns best during hands-on instruction, in small group or one-to-one formats, with visual aids and when he gets the chance to speak or move around. The special education teacher has used this knowledge to adapt her instructional techniques for Sam, such as teaching him a lesson and then having him teach his regular education classmates the same lesson. In a lesson such as this, Sam learns the material and builds his self confidence by speaking in front of his

peers about an academic subject. The special education teacher has many years of experience and a good imagination so there really is no end to the benefits of this discovery.

A discovery that will benefit Sam for years to come is his motivation to do well and his persistence in the face of failure. School has been difficult for Sam for the last several years. Despite this, he continues to put forth good effort and has not stopped trying. During the evaluation and after, the researcher continually pointed this observation out to Sam, which seemed to be a source of pride for him. As his skills increase, this persistence can lead to great things. It will be valuable to continue to focus on strengths such as his effort while he encounters difficulties in academic achievement.

Concerns for Next Year

While progress has begun at the end of the current year, the heart of Sam's special education will start the following year. During the end of the evaluation and progress monitoring activities, the researcher identified several areas to monitor in the next year. First, it will be important for the special education teacher to evaluate Sam at the beginning of the year. There will more than likely be some regression in skills over the summer and Sam is far enough behind that he cannot afford any more delays. Therefore, it is essential the special education teacher knows right where to begin when the academic year starts.

Behaviorally, an increase in self monitoring behavior may not provide Sam with the behaviors he needs to be successful in the classroom. If Sam continues to struggle with his behavior, a hypothesis considering his knowledge of appropriate behaviors may be constructed. Part of his behavior plan may be teaching him appropriate classroom behavior in a social skills group. Sam's ability to monitor his behavior may be intact, but if he is unsure of what constitutes appropriate behavior, he may still suffer behavioral setbacks. The elementary school guidance counselor already has social skills development groups in process. Sam could be evaluated by her as a candidate for that process.

A hypothesis that was not explored very fully during the current study is Sam's possible auditory processing deficits. Possible evidence of difficulty was observed in activities such as reading a math problem orally and having him write it down accurately and the Digit Span subtest on the WISC-III. An auditory processing problem for a student like Sam may play a part in his underdeveloped skills and may need to be accounted for in the general education classroom. If Sam continues to struggle in the general education classroom next year despite progressing with his special education, his auditory processing may be an issue that needs further evaluation.

Perhaps the most important aspect of Sam's education next year is the communication between home and school. In a time when so many students come from families that do not emphasize education, Sam is in a home environment that places a great value on educational attainment. Sam's mom has been involved in his academic

work throughout his school years and was an important part of the special education team. She has certain expectations which drive Sam to continue to put forth effort despite his struggles. Sam's mom is an ally for the school and Sam and should be viewed as a person who can provide ideas and insights into Sam's personality which will help future school personnel understand him more fully.

What the Evaluator Learned

Being a novice in the practice of school psychology and not having many opportunities to see a special education evaluation through from start to finish, this was a learning experience for the evaluator. Several mistakes were made along the way which will be discussed in order that the reader does not make the same mistakes in his/her own practices.

As mentioned earlier, the evaluator would not have normally given a WISC-III for a special education evaluation on an African-American male. The WISC-III has been shown to have biases that lead to poor educational decisions when it comes to students of different racial/ethnic backgrounds. It was deemed important for this research project in order to test a hypothesis of a verbal-performance split indicative of a learning disability. However, because Sam's school does not use categorical labels, this is an assessment procedure that would have been avoided by the evaluator on a normal basis because of the WISC-III's poor past validity with various racial and cultural students.

Another mistake the evaluator made which hurt the results of the study were the informal interviews conducted with the general education teacher and special education teacher. The results of these interviews would have been more beneficial if each interview was structured around a standardized set of questions. In particular, the interviews with the general education teacher regarding Sam's behavioral progress would have been more precise if a specific set of questions of a likert-type scale were used instead of an informal interview process. Any time standardization can be created in a data collection procedure, the results should be more valid.

Perhaps the biggest mistake made by the evaluator was the lack of foresight into progress monitoring procedures for the behavioral intervention. Without any adequate way for the evaluator to monitor progress, there is no way to evaluate the success of the intervention. Sam's self monitoring was deemed to be inaccurate according to the general education teacher's informal diagnosis, however there is no way to be sure how well the intervention went. One way to alleviate this problem is to have an uninvolved party conduct observations of Sam both before and after the intervention has begun. The evaluator feared his presence would affect Sam's behavior, therefore he was not a candidate to complete these observations. However, an uninvolved individual could conduct the observations and a reliability check could be completed between the observer's and Sam's data. In this way, both baseline data and progress monitoring data could be collected and still be unaffected by the evaluator's presence.

Finally, this case study paper was completed without a legitimate format as a guide. This is the first case study completed by the educational program the author is completing, therefore there were no examples to guide his writing. In the future the author would conduct more research into similar fields of study to examine a case study format that would be easy for the reader to read and more in line with current case study research guidelines.

Directions for Future Research

As shown in the technical sections of this study, there are several nationally normed standardized assessments available that have adequate validity and reliability properties. However, there were no independent reviews found for the QRI-3, the informal reading inventory used in Sam's assessment by the reading clinic. Reviews of the test are essential, as it is an often used test in Sam's school and the only reliability and validity data described is provided by the authors of the assessment. Users of the QRI-3 should be cautioned when using data derived from this test until independent reviews of its psychometric properties are completed.

There were also many advantages provided in the current study as to the use of curriculum based assessment procedures. Unfortunately, there are not many schools, Sam's school included with regards to reading data, which have the locally normed sample that should be used to make educational decisions. When there are not local norms available, curriculum based assessment users are forced to use other comparative data,

such as reading rates reported by published authors. This was the procedure that had to be completed in gathering reading data for Sam's evaluation. The evaluator was able to draw local comparisons in math and writing due to the norms available from Sam's school. It is important to draw appropriate comparisons, which is the goal behind curriculum based assessment. However when there are not local norms, this is impossible. Therefore a direction for future research is for more schools to conduct a norming procedure for their school and for the positive aspects of curriculum based assessment to be publicized as an alternative to nationally normed standardized tests.

Finally, Iowa's use of the entitlement system as opposed to the traditional use of a categorical system needs to be better researched. The purpose behind the system is to reduce the stigmatism that has accompanied categorical labeling of students in the past. However there is little documentation as to the overall advantages or disadvantages of this system. Researchers in Iowa and beyond would be encouraged to evaluate this system more closely to identify its future use.

Summary

Sam was referred for difficulties in the classroom both with academics and behavior. The general education teacher indicated that Sam was having trouble in many academic areas, most specifically in reading and writing, but also with math and spelling. His behavior problems stemmed from an inability to maintain attention and stay focused on the task at hand. This led to difficulties learning new material. Problem solving was

conducted with Sam and several academic accommodations were provided, however these efforts did not provide the support he needed to be successful in the general education classroom. Therefore a special education evaluation was conducted. Data were gathered with a variety of different assessment tools providing the evaluation team with conclusive convergent data. Specifically data were gathered in the areas of reading, writing, spelling, math, and his on task behavior.

Reading, which was initially the main concern for the general education teacher, was shown to be difficult for Sam and the results of his reading assessments demonstrated his reading level as significantly lower than those of typical peers. Sam especially had trouble sounding out new words and keeping his concentration on the specific reading task at hand. Because of his below average performance on reading assessments, it was determined that Sam would be eligible for special education in the area of reading.

However when Sam began working with the special education teacher, she reported that Sam's reading level was higher than his assessment results showed. Her data showed him still below grade level, but able to read better than was initially assessed. This promising finding may help to reduce the number of areas concentrated on by the special education teacher.

Sam's writing was also assessed. His writing skills demonstrated on curriculum based measures showed him to be significantly behind his peers in both the areas of content and mechanics. In class work showed that Sam was able to write legibly at times,

but when combined with the task of creating his own sentences and punctuation, his legibility suffered. The special education teacher worked diligently with Sam over the last two months of the year on his writing mechanics and experienced great success. Sam was able to use punctuation much better at the end of the year than during his initial days with the special education teacher. This progress will be built upon during the following year.

In math, Sam was struggling with specific mathematical processes, which contributed to an overall difficulty with 4th grade material. His basic facts were good, however he was observed to have difficulty applying them in more complex problems. He also struggled with regrouping in subtraction problems, which led to difficulties in many other problems, including division. Although math is a concern, it is not a priority at this point, therefore the special education teacher is working in conjunction with the general education teacher to deal with problems as they arise.

Sam's inattentive behavior could be a major contributor to his difficulties in academic areas. It was shown from initial observations that Sam was off task a great deal more than were his peers. This resulted in less time available for learning. An intervention was planned that would help Sam to monitor his own behavior and allow him to realize what his behavior looked like and how often it was occurring. This intervention included an external reminding device called a Watchminder. The Watchminder would vibrate at a given interval and Sam would record his behavior along three different categories. It was determined by the evaluator and the general education teacher that Sam

was not completely honest when recording his behavior, however the general education teacher did feel that Sam became more aware of his behavior. Although this intervention was not as well-planned nor as successful as hoped, both Sam and the general education teacher felt it had benefits that would help Sam reduce his off task behavior in the classroom.

Sam's academic difficulties are complex. There were many possible hypotheses that were considered and tested during the evaluation procedure. These hypotheses helped structure the special education goals and teaching methods used by the special education teacher. Sam experienced some remarkable success in the closing months of the school year. It is the hope and the expectation of the evaluation team that Sam will continue to succeed when he enters the 5th grade.

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APPENDIX A

SAM'S BEHAVIORAL INTERVENTION PLAN

The behavioral concerns that were raised in regards to Sam at the entitlement meeting were: staying on task, keeping hands to self and sitting appropriately in seat. Sam is having difficulty with these issues because he has poor self monitoring skills. One way to help Sam refine his ability to self monitor and therefore eliminate the problem behaviors identified is to provide him with an external reminder to be aware of these behaviors. As he becomes more aware of how often he is exhibiting these behaviors, he will also become aware of how to control them. This is the emphasis of the Behavior Intervention Plan for Sam.

It has been established that Sam has the ability to self monitor his behavior in a previous intervention with the entire class. Teacher reports indicate that Sam was able to monitor his behavior consistently and accurately. Whereas completing an intervention with the entire class may be too demanding for the teacher, an individual self monitoring system can be developed for effective and efficient implementation for one student.

Sam will be given a special watch that vibrates at specific, predetermined intervals. When he is externally reminded to be aware of his behavior Sam will then record whether or not he was successfully controlling the three pre-established behaviors. This will take very little time or effort on Sam's part, as the behaviors are fairly concrete in nature. As

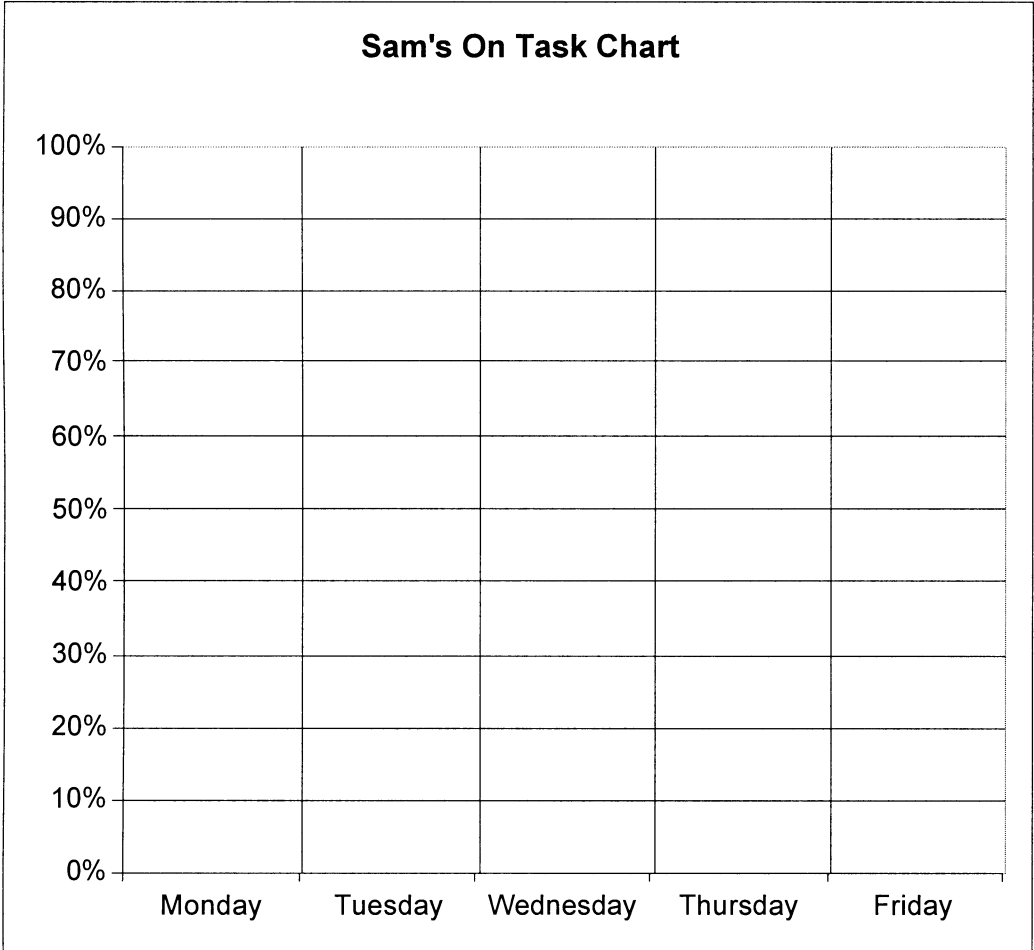
time goes on, Sam will hopefully begin to monitor his behavior without the reminder. Eventually, Sam will be able to monitor his behavior at all times without the use of an external device.

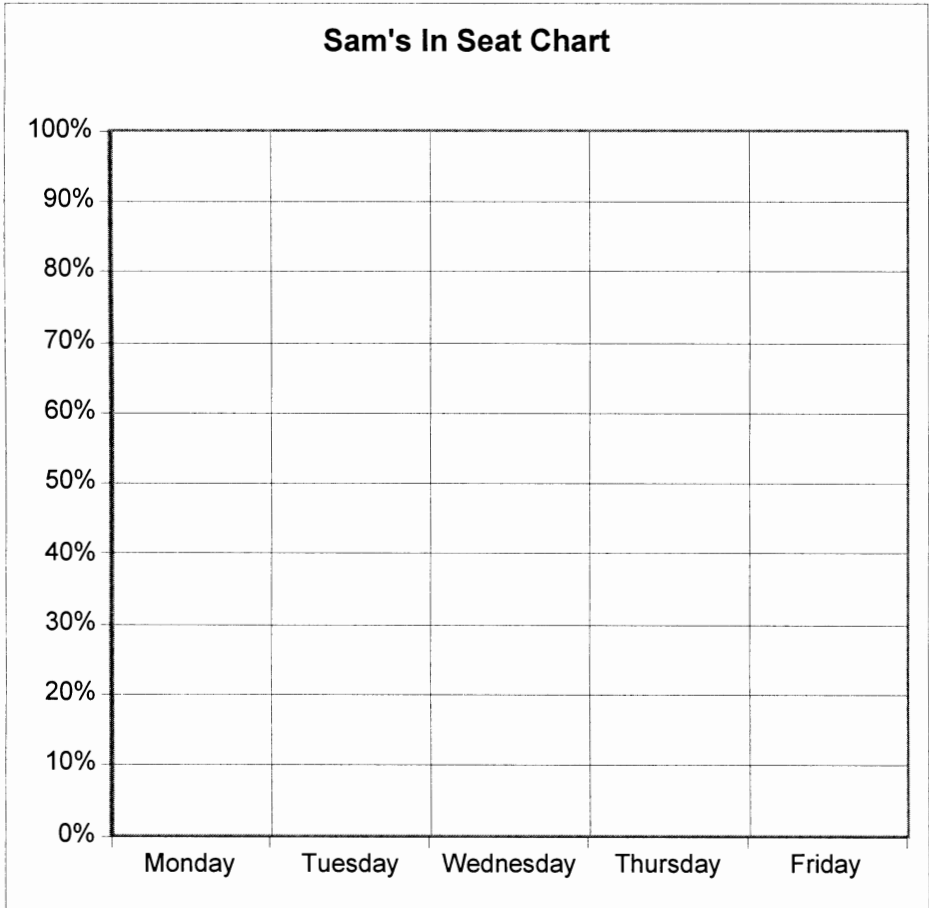
This procedure should be used at predetermined times when Sam has the most trouble with these behaviors. The teacher will be in charge of telling Sam when to begin self monitoring his behavior and also when to stop. The teacher will have the best estimate of when Sam is having the most difficult time. The teacher will also be in charge of doing some informal observations to determine whether or not the behaviors are decreasing and whether or not Sam is being honest in his evaluation of his behaviors.

If Sam is having difficulty buying into the system it may be beneficial to include some sort of positive behavioral support for achieving a predetermined level of consistency in his appropriate behaviors. However, it is my opinion that right now Sam will be able to use the monitoring system appropriately and effectively with no ties to external reinforcement. It may be valuable for Sam to be able to present his self monitoring data to his mom and possibly chart his success at home or at school. Any positive attention Sam receives from this system and appropriate behaviors will increase the likelihood of success.

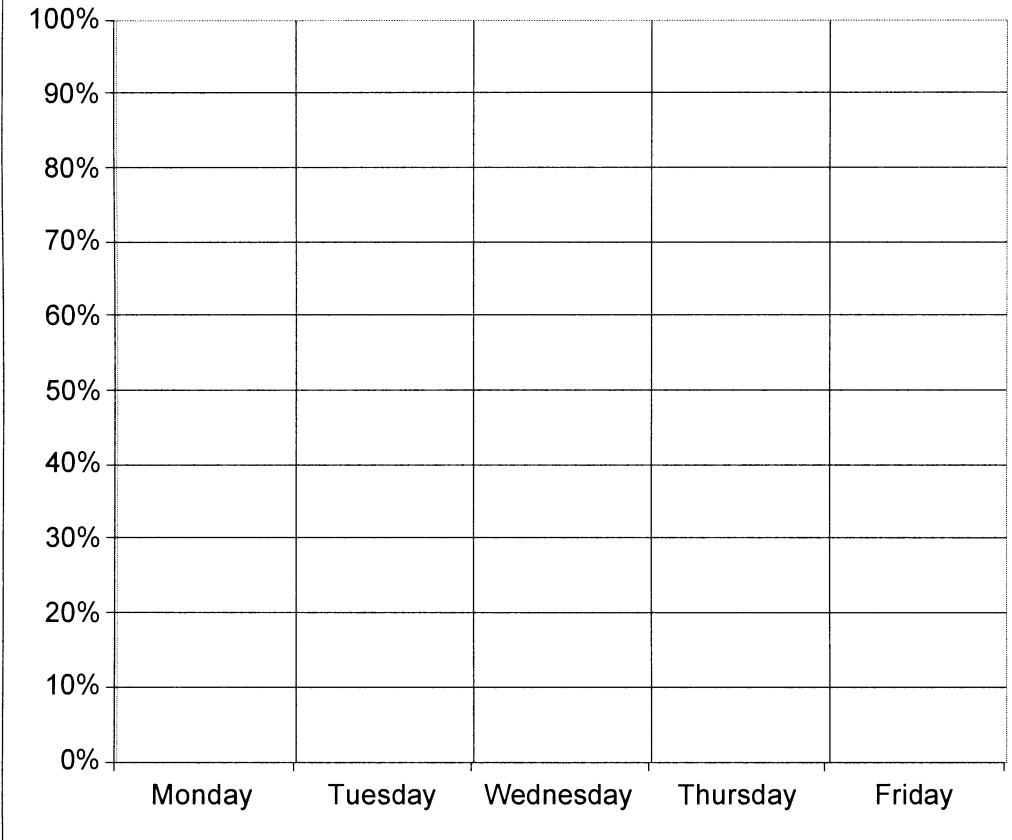
The school psychologist will be responsible for introducing the system to Sam and explaining the rules to him. The school psychologist will explain the behavior monitoring chart and the definitions of appropriate behaviors, as well as how to operate

the watch. Any problems or concerns from the parent, teacher or Sam will be handled by the school psychologist.





Sam's Hands to Self Chart



APPENDIX B

INTERVIEW PROTOCOL
(adapted from Kamphaus & Frick, 1996)**Sam's Mom: Interview Questions**

Who does Sam live with?

What does a typical day look like?

Describe the discipline system at home.

Describe Sam's role in the family.

What things does Sam like to do at home?

Describe his social circle.

Has Sam had any developmental or health-related difficulties while growing up?

Is he currently taking any medication? What and Why?

Were there any significant events in prenatal development?

Did Sam develop at the same rate as other children (crawling, walking, talking)?

What was Sam's temperament as a child?

Describe your education.

How do you feel about Sam's school and the education Sam is receiving?

What do you see as Sam's most significant school-related problem and why?

What things do you feel Sam excels at when at school?

What do you see as Sam's most significant problems at home?

What does Sam excel at when at home?

How do you view the referral for special education and Sam's placement?

How did you decide to send Sam to his current school?

How does Sam get help with homework at home?

What is your vision for Sam's education?

What are your visions for Sam after school?

Are there any considerations you feel have not been considered that need to be considered?

What concerns do you have about Sam's future?

Sam: Interview Questions

Who do you live with?

What does a typical day look like?

Describe the discipline system at home.

Describe your role in the family.

What things do you like to do at home?

Describe your social circle.

Talk to me about your mom's job.

Tell me about your dad and your relationship with him.

Describe the discipline system at home.

How do you feel about school?

What do you like about school?

What would you change about school if you could?

Tell me about your vision of the next several years of education and what you expect/hope.

What do you want to do after you are done with school?

General Education and Special Education Teacher Interviews

Both the general education teacher and the special education teacher were interviewed using an informal format. The format generally revolved around Sam's success or difficulties in the classroom or in small group work. The teachers were allowed to give a basic explanation of what they saw when working with Sam and how this related either to his evaluation or progress towards his educational goals.