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SPECIAL NEEDS STUDENTS: A QUALITATIVE STUDY OF THEIR LEARNING STYLES

By

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ABSTRACT

SPECIAL NEEDS STUDENTS: A QUALITATIVE STUDY OF THEIR LEARNING STYLES

By

Katy Lux

This inquiry describes a qualitative study of children who tend to be labeled as "learning disabled", "gifted" or "learning disabled/ gifted." In particular, the focus of this study is on the preferred learning styles of these students. The study seeks to answer three primary research questions:

How do these students interact with their age mates and their school environment?
How are their preferred learning styles made manifest in their behavior?
How well do they understand the ways they learn?

To answer these questions, the author employed the methods of descriptive research based on the application of anthropological practices to educational research. This

approach is known in the literature as "fieldwork research," "qualitative research," "ethnography" and "microethnography." The method is based on the use of participant observation extended over a long period of time. In addition to participant observation and mechanical recordings, the research included formal and informal interviews, gathering artifacts, talking to parents and teachers, and administering a learning style inventory to the student participants.

The findings suggest that the handicap(s) of the learning disabled/gifted students may have obscured the expression of any special gifts and talents. In addition, the academic weaknesses of the learning disabled students seemed to be the primary focus of attention in the mainstreamed classrooms and often excluded acknowledgment of any strengths. The gifted students, however, were viewed as a part of the total classroom unit and did not appear to be treated differently apart from that structure.

Considerable differences were apparent among the learning style preferences of the students involved. Similarities, however, did exist within each of the particular student classifications.

Information gained in this study might help define the concept of learning styles and guide educators as they introduce this knowledge into the curriculum, particularly as it concerns those individuals who are unsuccessful in school but appear at the same time to possess more ability than most of their age peers.

The joy of learning is often a nightmare for more than 10 million normal, bright, intelligent children--just because no one has recognized their learning difference. Understand their frustration--and begin to understand the problem.

Let no child be demeaned, nor have his wonder diminished, because of our ignorance or inactivity. Let no child be deprived of discovery, because we lack the resources to discover his problem. Let no child--ever--doubt himself or his mind because we are unsure of our commitment.

Author unknown

Dedicated to those who understand

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TRANSCRIPTION NOTATIONAL DEVICES

(N p. 100, #472 TS5 [85])	Material in brackets or at the end of an excerpt identify the location of the notes or quotes in the research material.
N	Refers to the field notes recorded during the process of gathering information.
p. 100, #472	Indicates the page number and exact frame of the material within the research notes.
TS5	Refers to the transcribed script and number of a tape recording.
[85]	Material in brackets identifies research from another study.
. . . .	A sequence of dots indicates that material within the turn being quoted has been excised.
( )	Empty parentheses indicate the transcriber hears speech, but could not decode it.
____	A dash marks a pause that is noticeable.

Chapter I

Introduction

Prior to the current national interest in learning styles, many educators attempted to respond to the obvious personal differences that were evidenced among individual learners. The open classroom, or non-graded school, was implemented to "maximize individual instruction" by permitting the use of various resources and pacing (Johnson & Lewis, 1971, p. 139). Salz (1974) described the open classroom as having a "relaxed, spontaneous, natural atmosphere" (p. 338), while Barth (1972), one of its major proponents, recognized that "children learn and develop intellectually not only at their own rate but in their own style" (p. 69). Unfortunately, the open classroom and other attempts to provide an atmosphere conducive to individualized learning were not always considered successful when viewed through conventional, whole class achievement findings. While the intentions of those innovative programs were educationally sound and noble in intent, even Goodlad (1977) reported that "the much touted reforms appear to have been non-events" (p. 69). Those views were based on data indicating that class gains were not significantly improved when innovations were initiated as a large group endeavor (Keefe, 1979).

The open classroom, however, incorporated many factors that recognized the need to provide an individualized environment for students. The traditional classroom, according to Propst (1975), was analogous to the formal

office where workplaces were neither comfortable nor effective. The former provided static environments that promoted inhibition rather than excitement, movement, or interaction among individuals. The manner in which an organization, a room, or a building is arranged affects behavior and either encourages or inhibits interaction (King & Marans, 1979); whereas active responsiveness produced learning among many (Dunn & Dunn, 1978).

The Need for the Study

In our present era of "labeling" students, we have a tendency to place students into categories from which they often cannot emerge. The so-called "learning disabled" and the so-called "gifted" both fall into such categories. For 17 years this researcher has worked with students who evidenced severe reading and learning disabilities. There was always a group of children who were unsuccessful in school and usually in other certain aspects of their lives, and yet had more "native intelligence" (another label) than most people. Often their giftedness was uncovered by the astute perceptions of well-trained clinicians.

After working with such students and other "average" and "above-average" children, it became evident that although these gifted young people had academic problems sometimes similar to the others, they also were different. They often preferred to learn in different ways and at

times they absolutely needed to use different approaches and techniques to retain or understand key concepts.

Today it may even be that gifted children with learning difficulties are fading from sight and may have all but disappeared as objects of educational attention. In some school systems, one might suppose they do not exist. Yet, if they do exist, they often go unrecognized.

It is evident that very little is really known or understood about these children. Are there, for example, any particular learning style elements that could assist in providing a more "suitable" learning environment for these students? What is it that can be observed of their special needs? Why have they been given the label of "learning disabled/gifted?" What does this label mean? What are the social consequences of such a label? How can the school curriculum be molded to fit their needs?

Major Inquiries and Subsidiary Questions

There are many unknowns involved here. Research is needed to establish a broader knowledge base concerning special needs students, particularly about those students who carry more than one label. Such information could then be used by educators, parents, and the students themselves. This particular investigation has been designed to contribute to that effort by intensively studying two "learning disabled/gifted" students, two "learning disabled" students, and two "gifted" students in order to answer three important questions:

How do these students interact with their age mates and their school environment?

How are their preferred learning styles made evident?

How well do they understand the way they learn?

Each of these major inquiries consists of a number of subsidiary questions that need to be identified and explained.

a. How do these students interact with their age mates and their school environment?

Many students struggle with "failures" for years before they are officially identified as "learning disabled." The process itself is long and unpleasant for the students, parents, and teachers involved. Once labeled, however, and the services of a resource room made available, the student must learn to interact with a different environment and new structure. Such an endeavor can be expected to have a significant impact on the social context developed under these circumstances. This social context includes new roles, statuses, and interactions of the students who are now placed in specific classrooms for the learning disabled. To describe this social fabric, it is necessary to answer a number of related, but secondary questions:

1. What is the role of each "learning disabled," "learning disabled/gifted," and "gifted" student in the

classroom? What are the statuses inherent in these roles?

The number of students in a classroom for the learning disabled is mandated by state guidelines and is deliberately kept to a low number so that the severity of each case can be addressed by the teacher and the assisting aide. Each student selected for this study must be observed in terms of his/her roles and statuses in this small population, as well as observing his/her relationships to the general population of school students.

2. What kind of student-student and adult-student interactions occur in this specialized setting?

These interactions need to be described and classified and then compared to the interactions that occur during other parts of the school day when they are "mainstreamed" into the regular classrooms.

3. What are the expectations applied to the students classified as special needs students?

These standards of behavior include those enforced by adults and also those that students impose on each other.

4. What pressures do outsiders exert upon the students with these labels?

These pressures come from students in the regular classrooms, from the media, from parents, and also from staff members within the schools.

5. How do students and adults negotiate the situations that arise when students know more about a topic or subject than the adults who are supposed to be teaching them?

In some instances, a student might know a great deal about a specific area or topic he or she is interested in and might even have gained more information or knowledge about it than the teacher. This is a potentially threatening situation that needs to be resolved. One aim of the study was to seek out these situations and analyze how they were negotiated by the students and the adults involved with them.

Taken together, these five questions provide a framework for identifying and analyzing how these students interact with their age mates and their school environment.

b. How are their preferred learning styles made evident?

Today, some educators have intentionally departed from the traditional discussion of classroom materials and pupil-teacher ratios and are raising critical questions about the ways in which students learn. These efforts and related research focus on the student learning skills and

"learning styles". Until recently, however, information and research on the ways that pupils learn have seldom been a part of proposals to individualize education.

Publications such as the National Association of Secondary School Principals' (NASSP's) Student Learning Styles: Diagnosing and Prescribing Programs point to new directions that school systems may profitably examine as they review their effectiveness. The key to effective schooling is to understand the range of student learning styles and to design instruction and materials that respond directly to individual learning needs (p. 43).

To understand how the students exhibit their learning style preferences, this study will center on three questions:

1. What are their preferred learning styles?
   The study will attempt to identify the elements that might be significant to their styles of learning, and analyze their overall responses to a learning style inventory.
2. To what extent are the students aware of their preferences?
   The student's reactions to the analysis of their learning styles will be described and on site observations will be used as a basis for answering this question.

3. What do students see as the relationship between how they are learning and what is expected of them to learn?

Each student as well as each teacher appears to have his or her own agenda as to what should be learned or taught. It is important to identify how the students perceive their own learning and how this relates to the overall pattern of formal schooling.

Answers to these three questions are expected to provide key insights into the role of learning styles among the special needs students.

c. How well do they understand the way the learn?

Adults have generally assumed that they know what is best for all children, implying that students, themselves, may not be aware of their own needs. But responses from more than 150,000 learners reveal that most students can describe how they will learn best (Dunn, 1982). It does appear, however, that some cannot offer this description, and others can only describe preferences for those learning style elements that are very important to them (Dunn, 1982). This study will examine the process of student awareness of learning styles and what effect this self-knowledge has on their school situations. This examination entails answering three questions:

1. What kinds of situations are encountered with learning style preferences and how do the students react to them?

When an element is important to students, most can verbalize their preferences and dislikes (Dunn, 1982). An element that is extremely important to an individual can be identified easily by most people. Different school situations, however, may or may not allow for preferences to be used. The students' reactions to these situations will be detailed in terms of their verbal and nonverbal responses, their attitudes, and the strategies they invoke for dealing with them.

2. What information and attitudes are required to utilize learning style preferences successfully?

By studying the learning styles assessment instrument and the students' interaction with their environment, what students need to know in order to achieve competence in their own styles and preferences will be delineated.

3. To what extent and in what ways have these special needs students become competent in their use of preferred learning styles?

Based on answers to the preceding questions, descriptions will be developed of the level of competence that these students have achieved in their use of preferred learning styles.

The answers to these three questions will help answer a key question about awareness of one's own learning style preferences: what do people need to know to be able to understand the way they learn? By identifying the degree to which these students have dealt with their own learning disabilities and made use of individual learning preferences, this study will speak to the questions of where, in the curriculum, schools should place methods of identifying individual learning preferences and why it may need to be a necessary part of understanding student needs.

Assumptions of the Study

This research project assumes that a network of social relationships builds up around the special needs student (or around any student, for that matter) and that an understanding of that network will help explain how these students are perceived and how they relate to their school environment. It also assumes that students make frequent use of their preferred learning styles and that their having explicit knowledge of these styles might assist them in their growth to understanding themselves. These attitudes and acquisitions of information will be studied in order to help define the need for an analysis of learning styles and to help decide where in the educational system and in what ways it might be usefully infused into the curriculum.

Definition of Terms

Learning Style. In the broader context, learning styles are "characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1979). Cognitive styles are information-processing habits; affective styles, motivationally-based processes; physiological styles, biologically-based responses. For the purpose of this investigation learning style was defined according to Dunn and Dunn (1975) as "The manner in which at least 18 different elements of four basic stimuli affect a person's ability to absorb and retain information, values, facts, or concepts" (p. 74).

Mainstreaming. Meaning that to the maximum extent appropriate the handicapped student is educated with children that are not handicapped. A student identified as handicapped is educated in the least restrictive environment. (Public Law 94-142)

Learning Disabled. Imperfect ability to listen, think, speak, write, spell, or do mathematical calculations; development at a less than expected rate in cognitive, affective, or psychomotor areas; unsatisfactory performance that is not based on social, economic, or cultural background.

Gifted. Individuals possessing special gifts that are potentially unparalleled, whether in academic talent,visual and performing art talent, vocational talent, leadership talent, creative thinking abilities, or athletic talent.

Learning Disabled/Gifted. Those individuals with extraordinary gifts, or talents, but exhibiting development at a less than expected rate in cognitive, affective, or psychomotor areas, or an imperfect ability to listen, think, speak, write, spell, or do mathematical calculation.

Limitations of the Study

This study focuses on the preferred learning styles of a select group of students identified as "learning disabled," "learning disabled/gifted," and "gifted." The research is limited in the following ways:

1. Identification of students: The criteria and identification of "learning disabled" students is specifically delineated at the federal level in Public Law 92-142. However, no such document has been mandated for the uniform identification of "gifted" students. In that regard, this researcher will rely upon the verification of clinicians, teachers, parents, and/or student products to assist in the recognition of this select population.

2. Population: This study was conducted in a suburban school district that borders the limits of a midwestern city. Only elementary students at an approximate third grade age level are at the core of this research. Moreover, the selection of two "learning disabled/gifted" students, two "learning disabled" students and two "gifted" students might allow a generalization to other such students and may be considered representative of the target population.

3. Learning Style Instrument: No current learning style instrument appears adequately to provide a truly comprehensive assessment of the cognitive, affective, and physiological domains of learning style. However, the Learning Style Inventory (LSI) by Dunn, Dunn, and Price (1975, 1985) has established impressive reliability and face and construct validity. Since examination by the National Center for Research, the LSI has also evidenced predictive validity. Having used a variety of instruments over the last several years, this researcher has also found the LSI to be an effective, manageable instrument in the process of identifying individual learning style preferences.

Chapter II

Review of Related Literature

For thousands of years, educators have sought to define education's role in meeting the needs of the individual. Socrates, in utilizing what is known today as the Socratic Method, sought to foster individual development. Rousseau, in Emile, addressed the needs of the individual. Dewey, in his monumental array of works at the beginning of the twentieth century, focused on the learner as an individual. In recent decades, considerable research and experimentation have been devoted to developing what is known variously as "individualized" or "personalized" instruction.

Ultimately, education must come to grips with the different learning needs of the individual learner. These differences flow from variations in individual intelligence, drive, skills, and accomplishment as well as personal and family predispositions and the cultural influences of the wider society. In spite of considerable dialog, there is still substantial discontinuity between theory and practice in identifying and meeting these needs.

The educational profession has helped perpetuate a kind of "fictitious individualization" by equating lower pupil-teacher ratios with meeting student needs (Keefe, 1982). The theory of individualization has been with us for many years, but there has been little application of

the concepts in the majority of school systems. According to Keefe, individualization is a "creed without substance" (p. 43).

Today, some educators have intentionally departed from traditional discussions of classroom materials and pupil-teacher ratios and are raising critical questions about ways in which students learn. Many of these efforts and related research focus on student learning skills and "learning styles." Much has been written about basic learning skills, but not until recently, however. Information and research on the ways that pupils learn have seldom been a part of proposals to individualize education.

In the not too distant past, schools and their teachers were protected by the fairly widespread belief that students who had not learned had not paid attention. In the first half of this century, many social ills were isolated as explanations for lack of academic progress. Those, however, were the days before educators had learned to use IQ, socioeconomic status, or insufficient environmental stimulation as reasons for the failures of many pupils. As the social and economic trends changed in the 1950s and 1960s, rapid growth, extensive mobility, and belligerent student attitudes were widely accepted reasons for inadequate academic achievement.

During the past decade, however, the public has gradually undergone what appears to be a significant shift,

and today, with rekindled vigor, low achievement is blamed directly on the schools, their teachers, and the instructional programs or methods being used (Dunn & Dunn, 1978).

Increasing attention is being focused on the many functional illiterates who are awarded high school diplomas and then are pushed out into the job market, only to be condemned to unemployment, marginal employment, or welfare. Public concern has moved from voter unhappiness at school board meetings to taxpayer suits charging educational malpractice. An antieducation attitude has been voiced by legislators who have submitted bills that would reduce funds for education while strengthening accountability laws that would link better school performance to fiscal support. In a series of court actions, each burrowing successively deeper into school systems' vulnerabilities, primary focus has been on an individual's right to expect results from education and on a demand for accountability from educational personnel (Dunn, Dunn & Price, 1977).

In the classroom of today, we are attempting to educate more children with more varying levels of intelligence and more diversified cultural backgrounds than ever before. It appears imperative that we not lose sight of our educational goals and examine each of these complex individuals to identify more exactly how he or she is likely to learn most effectively. This has always been a formidable challenge in the teaching process.

The task is not impossible, and it appears to be what the courts and the legislatures are demanding. Examine, at the federal level, Public Law 94-142, which requires diagnosis, the development of related prescriptions, individualized instruction, and a tightly monitored process that includes parental involvement for all handicapped children. Consider, too, that individualization techniques are now essential to improved instruction for the gifted and talented youngsters, for the handicapped, and - for the additional focus of this study - the "learning disabled" and the "learning disabled/gifted."

The key question explored by many is "what do we do about individual differences among learners?" If we wish individual students to have optimum learning experiences in our schools, we almost surely must realize that effective instructional planning must accommodate the learning characteristics of individual students to be effective with these students. But do we place more emphasis on changing the learning environment, or do we instead try more to change the learner? Some scholars believe that we need more responsive instructional environments based on stylistic and skill differences among learners. Most of the individualized instruction and learning styles efforts to date have concentrated on this approach.

Other scholars feel that we should help the student become more responsive to the existing learning environment. If a student is not very adaptable or cannot

cope well in a conventional classroom setting, or if he or she is more right hemisphere oriented, some say that we should and can enhance his or her learning styles to allow for more successful school achievement.

Learning Style: An Instructional Theory

Elements of learning style appeared in the literature as early as 1892, but the subsequent researches were plagued with methodological problems and a preoccupation with determining the one perceptual mode that would best improve student learning. Specific research on cognitive styles was greatly expanded in the United States after World War II at Brooklyn College, the Menninger Foundation, and the Fels Institute (Keefe, 1982). Current efforts to explain the underlying processes of learning and teaching reflect two lines of research. One group retains dominant interest in the cognitive dimensions of style. The other is concerned with applied models of learning and teaching and multidimensional analysis of styles.

Allport, in 1937, described the active role individuals played in the learning process. Unique behaviors which were evidenced consistently and in patterns were observable through the performance of specific tasks which generated predictable individual responses.

The following year, Thurston (1938) correlated cognitive processing with seven types of mental abilities. He however, did not advance the concept to specific and unique individual differences. The expansion of that theory was

conceived 21 years later by Guilford (1959) who refined Thurston's model and implied that individual differences, strengths and weaknesses, directly affected the learning process.

During the same period, other researchers were beginning to examine individual psychological differences. For example, Lacey (1950) investigated those characteristics that were affected by stressful situations. Six years later, Estes (1956) examined and critiqued research based on group testing that was intended to predict individual differences. Similarly, Sontag (1958) also studied relationships between intelligence testing and individual abilities; his work mirrored Allport's earlier investigations. That same year, when scrutinizing intelligence testing, Vernon (1958) identified specific traits and characteristics which not only were unique, but also were stable. While Vernon's early suppositions were limited outgrowths of analyses of intelligence, he subsequently examined selected personality characteristics and preferences, and substantiated a need for instrumentation which accurately could assess identifiable related traits and behaviors; he also described the effects of the specific instructional techniques on manifested characteristics.

The 1960s evidenced an increase in the emphasis on individualization. The uniqueness of the learner became a primary focus of many educators. Both Bandura (1962) and

Travers (1962) recognized the need to reorient educational theorists, but unfortunately, clear-cut directions for facilitating that outcome were lacking. During the same year, James (1962) coined the term "modes of preference" to identify specific elements that affected achievement when students either were matched or mismatched with instruction. His work became the precursor to current learning style research.

By 1969, Tyler observed a significant trend in investigative studies toward "psychological differentiations" (p. 642). Her review of research on achievement pinpointed the emergence of individual learning styles and she observed, as Vernon had observed several years earlier, that certain characteristics related to intelligence and that self-concept appeared to remain stable over the years.

The phenomenon of learning style had exploded into several discrete philosophies by the 1970s; all implied that individual uniqueness was the primary variable in the information receiving process.

Hill (1971), one of the earliest proponents of learning style, described the phenomenon as the way in which an individual searches for meaning. Purportedly, individual cognitive style is reflected in the way: a) qualitative and theoretical symbols are handled, b) cultural influences affect the meaning given to symbols, and c) meaning is derived from symbols that are perceived. Hill's was the

first comprehensive approach to how individuals process information and, although he termed the concept Cognitive--rather than Learning Style--his was the model that essentially pioneered the learning style construct.

Three years later, Ramirez and Castaneda (1974), in agreement with Hill, emphasized that cognitive style differences (for either field-dependent or field-independent behavior) and cultural differences create individual learning styles. The contention was made that learning style is not permanently fixed, and it is, therefore, possible to intervene and affect it.

Similarly, Kolb (1981) also viewed heredity as an influential component in determining learning style. He, however, also considered past experience and the demands of the present environment as important factors that determined selected unique characteristics. Specifically, his experimental learning theory identified four learning behaviors; (a) concrete experience (feeling); (b) reflective observations (watching); (c) abstract conception (thinking); and (d) active experimentation (doing).

Adapting Kolb's earliest studies on a four-model conceptualization, Gregorc (1979) posited that learning style was basically a set of behaviors which acted as indicators of how each mind operates or views the world. He suggests that style appears to be both nature/nurture in its roots, and that styles reflect genetic coding, personality development, and environmental adaptation. An individual's

actions could be viewed along a bipolar continuum ranging from concrete to abstract processing interwoven with random or sequential behaviors. Thus, each category of learning style was perceived as an interaction duality: (a) concrete sequential; (b) concrete random; (c) abstract sequential; and/or (d) abstract random.

Utilizing a different model, Schmeck et al. (1977) perceived learning style as the product of the organization of a group of information processing activities that individuals prefer to engage in when confronted with a learning task. Those activities, like Gregorc's, appeared on a continuum but ranged from deep and elaborate to shallow, repetitive and reiterative thought practices.

Designing research concerning another completely different element, Hunt (1979) developed a concept of learning style that describes students in terms of those educational conditions under which they are most likely to learn and essentially describes the amount of structure individuals require.

At the same time that Gregorc, Hunt, Kolb, Ramirez, and Castaneda, and Schmeck were postulating theories that reflected comparatively narrowly defined concepts, other researchers were joining Hill in examining a more holistic approach to learning style. Canfield and Lafferty (1970) perceived that phenomenon as an outgrowth of six variables which consisted of 1) academic conditions (relations with instructor and peers), 2) structural conditions

(organization and detail), 3) Achievement conditions (goal setting, competition), 4) content (numbers, words, etc.) 5) mode of preferred learning (listening, reading, iconic and direct experience, and 6) expectation of performance level (superior through satisfactory). Keefe (1979) defined learning styles as characteristic cognitive, affective, and physiological behaviors that served as relatively stable indicators of how students perceived, interacted with, and responded to their learning environments. His broad perception of the concept was in concert with the comprehensive model previously presented by Dunn and Dunn (1972, 1975, 1978, 1979).

In the late sixties, Dunn (1971) noted an increase in academic achievement when a multisensory instructional approach was utilized for underachieving primary students. The following year, Dunn and Dunn (1972) presented a theoretical model of learning style that contained 12 observed elements. Further examinations, interviews, and experimental studies verified the existence of 18 elements (Dunn, 1976) which eventually then were expanded to include 21 selected characteristics (Dunn, 1981). Those traits eventually were dispersed among five stimulus categories (Dunn, 1981, 1983).

The first identified classification included the environmental elements of light, sound, temperature, and design which are "thought to be biological and related to one's physical being" (Dunn, 1981, p. 32). They classified

the second stimulus as emotional and included the elements of motivation, persistence, responsibility, and structure in that grouping which "appears to be an outgrowth of both the environment and each person's emotional makeup" (Dunn, 1981 p. 32). Learning alone, with peers, in pairs, in teams, with adults, with media, or in several ways comprised the third stimulus, "the sociological elements of learning style which appear to be environmentally based " (Dunn, 1981 p. 33).

The fourth identified classification was the physical which "appears to be biological in origin" (Dunn, 1981, p. 33). Perceptual strengths and weaknesses (auditory, visual, and/or tactual/kinesthetic), time of day, desire for intake, and the need for mobility encompassed that subgroup.

Biological and environmental factors were recognized as the determinants of the most recently identified stimulus, the psychological elements. That domain encompassed global or analytic learners, left or right hemisphericity, and impulsive versus reflective students (Dunn, 1981). In 1983 left and right cognitive styles were supposedly incorporated under simultaneous and successive processing. This section, however, remains ambiguous and not at all clearly connected to the inventory.

Though no current learning style instrument may appear to provide a truly comprehensive assessment of the cognitive, affective, and physiological domains of learning style, nevertheless, learning style diagnosis appears to be

a primary component of the teaching-learning cycle, one that opens the door to a personalized approach to education. Every human appears to have a learning style regardless of IQ, achievement level, or socioeconomic status. Psychobiologists have also attempted to identify which elements of style are biologically imposed and which develop as an outgrowth of individual life experiences (Restak, 1979; Thies, 1979). Although style can change over time as a result of maturation, Dunn (1986) claimed that: (a) strong preferences change only over years; (b) preferences tend to be overcome only by personal motivation; (c) teachers cannot always identify students' styles easily without appropriate instruments; and (d) when students are taught in ways that complement their styles, significantly increased achievement and improved attitudes and behaviors result.

It is important, however, to recognize that the idea of increasing achievement by teaching students according to their preferred learning styles is not supported by all researchers. Kampwirth and Bates (1980), for example, severely criticized this widely accepted premise. They discovered 22 studies that investigated the modality methods problem. Of these, only two showed positive results. The remaining 20 either resulted in no clear evidence either way or demonstrated that teaching to the nonpreferred modality produced better results than did teaching to the preferred modality.

Foster, et. al. (1976) also recognized that studies of this type generally failed to establish significant interactions. However, they point out that this research is characterized by serious methodological errors including failure to establish discrete groups and failure to delineate specific controlled treatments. In designing a study which avoided some of these methodological problems, Foster, et. al. (1976) demonstrated that a relationship does exist between modality strength and the ability to remember sight words taught through procedures designed to emphasize either the visual or auditory modality.

In addition, reference should be made to the ethnographic/sociolinguistic research on school failure among which McDermott and Aron (1978) take a look at the possibility of equal educational opportunity in American culture. It became evident to them that learning could be accomplished in isolation or in conjunction with others. However, these methods were failing to educate large numbers of students who were capable of making meaningful use of the contents of their education. As a result, schools were encouraged to create classroom situations in which learning is a positive social achievement and individual identity is enhanced through contributions to group performance.

Today most of the major learning styles models use a self-report instrument to diagnose student's preferences for selected variables (Canfield & Lafferty, 1970; Dunn, Dunn, & Price, 1975, 1978, 1979, 1981, 1984; Gregorc, 1979;

Hill, 1971; Kolb, 1971; and Schmeck, 1977). Some of the most current research conducted by these widely used instruments indicates that teaching students through approaches that complement their styles increases their achievement significantly (Carbo, 1980; Debello, 1985; Hodges, 1985; Lynch, 1981; Martini, 1985; Murrain, 1983; Pizzo, 1981; Shea, 1983; Spires, 1983; Tanenbaum, 1982; Virustko, 1983). Furthermore, Lynch (1981) reported significantly decreased truancy when students' assigned classes matched their time-of-day preferences.

The Gifted and the Learning Disabled

Prior to the establishment of concrete efforts in learning styles, the attention of United States educators had turned dramatically to the identification and special education of mentally gifted and academically talented students, particularly those in science and mathematics. The sociopolitical nature of this interest in gifted children and their special educational needs has been well documented by Newland in 1979, Whitmore in 1980, and Tannenbaum in 1983. The post-Sputnik era illustrated this phenomenon as Americans became obsessed with a desire to develop more scientific leaders in order to maintain world power and leadership in competition with Russia. However, by the middle 1960s attention to the needs of gifted students waned as new concerns about the culturally different, the educationally disadvantaged, and racial minority students emerged as a significant part of the Civil

Rights Movement. During the 1960s many innovative programs were funded by the federal government in an attempt to ensure equality of educational opportunity. Concurrently, steadily increasing amounts of federal subsidy were allocated in support of research and the development of special education, in particular for the handicapped and/or learning disabled. The field of special education received substantial support to do research, to train teachers, and to implement experimental programs.

In 1969, Congress requested the Commissioner of Education to conduct a study on the status of gifted education or, more specifically, what was happening to gifted students educationally in America's schools less than ten years after the intense post-Sputnik developmental period. The Marland Report, published in 1971, indicated that fewer than 4 percent of the children in the gifted population were receiving any special educational services.

As the Marland Report was stirring renewed concern about the neglect of gifted students, the Civil Rights Movement and the court cases won in behalf of excluded or inappropriately educated handicapped students resulted in what has been commonly called the "mainstreaming movement." What could be described as growth in moral consciousness produced investigation into the damaging effects of labeling and segregating handicapped children (Hobbs, 1975; Reynolds & Birch, 1977). The outcome was Public Law 94-142, The Education for All Handicapped Children Act (1977).

This was legislation requiring the protection of every handicapped child's right to a free, appropriate education in the least restrictive environment.

The official definition of learning disabilities (P.L. 94-142) states:

> "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Refinement of the assessment procedures and efforts to identify handicapped children at an early age resulted in the identification of a surprising number of young children who were classifiable as both "disabled" and "gifted."

The new field of education for "learning disabled/gifted" students is emerging as a result of the intersection of special education for handicapped and for gifted students. This intersection of these two fields occurred largely as a by-product of the process by which Public Law 94-142 was implemented. Mary Meeker, Merle Karnes, and Anne Sanford were among the first educators of the gifted to investigate the nature of this subpopulation, and concentrated mainly on the development of special programs (Maker, 1977).

In the early 1970s The Association for the Gifted (TAG), a division of the Council for Exceptional Children (CEC), established a national committee comprised of professionals interested in the development of the field of gifted handicapped education. National conferences on the topic were held in 1976 and 1977, but the difficulty of gaining a sufficient number of participants occurred as available travel monies decreased. As a result, a plan for annual national conferences on gifted handicapped was dropped. In 1977, the category of "gifted handicapped" was added to the indices of the Educational Resources Information Center (ERIC), but the number of existing publications referenced remains very small.

It is evident from limited research and corresponding case studies that too often professionals have failed to recognize and address the individual's giftedness and related specific needs. It is not unusual for disabled persons to view individual professionals, institutions of learning or rehabilitation, and government agencies as definitely having been obstructive in relation to personal goals. The obstruction appears to emanate from stereotypic expectations held for the disabling condition and a narrow view of the person--that is, a failure to assess the total attributes and needs to the individual and to design a holistic approach to treatment.

According to Whitmore & Maker (1985), appropriate educational opportunities often have been withheld from

disabled children. Typically, such children are placed in programs of intervention for the handicapped and either are not considered for or are excluded from programs for gifted students. Eisenberg & Epstein (1981) described their Gifted/Talented Program for the handicapped in which forms for nominating handicapped gifted and talented students were sent to designated New York City Schools serving a full 60,000 handicapped students. Not one student was nominated. When the disability is not noticeable owing to the child's superior adaptive skills or the invisible nature of the handicap (such as learning disabilities), no special educational service may be provided. The handicap itself may obscure the expression of the special gifts and talents. For example, blindness, deafness, and some learning disabilities have the effect of slowing development and thus may result in deceptively lower IQ scores. Blind and deaf children, because of their sensory deficits, tend to be more concrete in their thinking, which will hardly help the abstract reasoning necessary for a high IQ score. Dyslexic children will certainly suffer on verbal components of an intelligence test, although Marx (1982) suggested that dyslexic children may have much higher than normal spatial-oriented giftedness. Other handicaps (for example, emotional disturbance or social maladjustments, orthopedic or health impairments, speech or language impairments) also can interfere with obtaining an accurate high score on an intelligence test.

It seems quite common for special educators as well as regular classroom teachers to teach all handicapped children as though they were intellectually slow or even mentally handicapped. Consequently, these children frequently are systematically excluded from learning environments in which their superior abilities and gifts can be stimulated and developed.

Similarly, school psychologists have tended to conduct assessments with an exclusive focus on the "problem area" or disability, not even exploring the possibility of giftedness. Medical and rehabilitation professionals have also tended to focus on the areas of weakness associated with any given disability and, when they are unaware of the possible presence of exceptional intelligence or talent and the potential implications for treatment, have often communicated inappropriately low expectations, with no encouragement that higher aspirations may be attainable. To help in the identification of gifted handicapped children, Maker (1977) recommended that (1) handicapped students should be compared with others who have the same handicap, and (2) characteristics that enable the handicapped child to effectively compensate for his or her handicap should be weighted more heavily. For example, if an orthopedically impaired student cannot write, his/her compensating verbal and cognitive abilities should receive more weight; if a student cannot speak, his/her written, artistic, and creative talents should be examined.

In spite of the present sophistication of special educational services, teaching methods, and assessment procedures available, Whitmore and Maker (1985) have claimed that, in too many instances, very little change has occurred with respect to the development and assessment of giftedness in individuals with disabilities.

Our present practices in identifying students as learning disabled are further compounded by the liberal expansion of what is recognized as fitting this category. The term "Learning Disability" has become a catchall phrase. It generally includes those with minor physiological dysfunction, the clinical treatment for which we can do much to overcome much of the disability. It also includes much harder to diagnose maladies associated with the mind, the personality and the emotions. The term "Learning Disability" is attributed to S.A. Kirk who first used it in an article in the journal Exceptional Children in 1962. Previously, Alfred A. Strauss, director of a school for brain-injured children, developed the theory of what he called "Minimal Brain Dysfunction" (MBD) which was based on observations of children who though not emotionally disturbed, autistic, aphasic or mentally retarded were not able to learn as might be expected from their intelligence. The idea of MBD was that no actual brain damage could be detected by clinical means yet the child exhibited the kind of behavior which suggested some dysfunction.

Curiously, studies conducted in the last two decades indicate that six to eight times more boys than girls in the age range from five to twelve years exhibit a learning disability. According to Speed and Appleyard (1966), no generally accepted reason has been given for this statistic, but some studies strongly suggest a genetic link.

Another interesting aspect of learning disabilities is that a substantial number of handicapped gifted children are creative (Maker, 1982a). It may be that creativity comes from the need for such children to practice their divergent thinking skills in order to accomplish the kind of everyday tasks which other individuals perform with ease.

In her book Providing Programs for the Gifted Handicapped, Maker (1977) comments on data obtained from WISC and Binet profiles which appear to indicate that while handicapped children may show a deficity in memory, the subtests which measure problem solving and relationships involving comprehension and similarities reveal relatively higher scores. She points out that this finding is only suggestive, but it does seem to indicate that the more abstract skills are less likely to be impaired than are abilities related to information or math span, all of which call on short and long term memory.

It is this seemingly limited amount of research and this researcher's desire to know more about these

particular students which has led to the inquiries of this paper. Research into the elements of learning styles among "gifted learning disabled" individuals is very scarce research. Yet these students pass through the educational systems every day. By extending this inquiry over a period of 6 months and focusing on 6 specific individuals in depth, it may become possible to identify finer details of the social phenomena that surround these individuals, as well as extrapolate information on how they learn.

Chapter III

Procedures, Materials and Data Analysis

Procedures of the Inquiry

The methods used in this study are based on the application of anthropological practices to educational research. This approach is known in the literature as "fieldwork research," "qualitative research," "ethnography" and "microethnography." This method is based on the use of participant observation extended over a long period of time. It is a form of descriptive research. One of the primary strengths of ethnographic research is that the phenomena under study can be seen in a naturalistic condition, though modified somewhat by the presence of the researcher.

The anonymity of participants in this study is strictly protected. In addition, permissions to observe were obtained in advance a) from students selected for special study, b) from parents of the students, c) from teachers in whose classrooms observations were made, and d) from school officials responsible for administering the sites of the study.

Initial steps taken for this study were divided into two parts: What preparations were made and what procedures were used.

1. Initial Preparations Made

The student population identified as having special

needs was chosen because we know so very little about them. The resource room that served as the setting for the study was selected because it has a well developed procedure for using learning styles with the students placed therein. Harrison Elementary School, as it will be called, has housed a resource room for the learning disabled for the last 18 to 20 years and appears to have been very successful in integrating most of its students into the rest of the student body. The majority of teachers have been together in this school for many years. They practice routines that allow for the infusion of new staff, but at the same time protect the procedures and beliefs that have permeated the school for many years.

Harrison Elementary School is part of a growing suburb outside of a large mid-western city. Kingsville, as a community, is generally supportive of its schools and exhibits a good share of parental involvement. Although it is the site of several low income government housing projects and two large trailer parks, its student population is primarily reflective of middle or upper middle family background and revenue is generated from several small businesses as well as one major company that has significantly expanded.

Harrison Elementary in the Kingsville Public School System is one of the system's fastest growing elementary schools with a projected student population of over 400. It is one of several elementary buildings within this

district. It is surrounded by several low-income housing projects, newly built duplexes, small businesses and boundaries that place it within the territory of the life of the city. The school reports an almost 45% student turnover within each school year. Having worked in this same building from 1973 to 1982, the researcher is quite familiar with most of the Harrison school staff and its pattern of the constantly changing school population.

The class in the resource room is taught by a teacher who will be called Mrs. Greenman. Mrs. Greenman and this researcher had worked together in previous years and one summer took a week long training session with Barbara Meister Vitale, a well known proponent of learning styles and brain function. Mrs. Greenman had long been interested in learning styles and has made considerable effort to avail herself of opportunities to gain further knowledge and insight. Years ago, she and the researcher attended an abbreviated workshop with Anthony Gregorc, another notable proponent of the use of learning styles data and knowledge of brain function. It was at the summer training session, however, that the idea for this study was first conceived. This researcher's subsequent training on learning styles with Rita and Ken Dunn in New York further assisted in framing the ideas.

The researcher has, on occasion, spent some time this year in Mrs. Greenman's classroom when she was attending a

meeting. As a result, the researcher has had time to observe class procedures and allow the students time to become acclimated to the researcher's presence.

Harrison School was visited several times in order to make arrangements with the principal to be able to use this setting as the "base" for this study. The researcher visited with Mrs. Greenman to discuss the same possibility and also to determine if she had any students classified as "learning disabled/gifted." After discussing the criteria for selection, she readily identified two students whom she felt would comfortably fit the description. Russ and Dori, as they will be called, would never be identified as gifted if the criteria were high cognitive test scores. Mrs. Greenman, however, could attest to their remarkable thinking abilities and their creative talents in the fine arts. With further investigation, input of other teachers, parental acknowledgment of special abilities, and artifact collecting, this researcher was able to draw upon many years of working with gifted students and feel assured that Russ and Dori were appropriately selected.

Although their individual spirit, personality and dimension will come to light in Chapter IV, it is important for the reader to briefly meet Russ and Dori. Unlike some other third graders at Harrison Elementary, Russ and Dori were both part of a two parent family pattern. Russ' parents both worked to provide middle class standards

for their two children and they lived in a housing section consisting of 10 year old duplexes. Both parents valued the education of their children and were supportive of the schools. Dori, on the other hand, came from a family pattern where only her father worked outside of the home. The business success he experienced provided the family with sufficient wealth to be able to afford designer clothes, luxury possessions, and extravagant hobbies, such as antique car collecting. On occasion, Dori's father would take Dori out of school to provide a "fun" day for her.

Russ and Dori both enjoyed art activities and seemed to excel in the use of fine motor skills required by such endeavors. In addition, both were well mannered and participated willingly in most school activities. Except for a brief period of time, Dori remained as the only female student in the resource room, attesting to the ratio statistic found by Speed and Appleyard (1966) that six to eight times more boys than girls in the age range from five to twelve years exhibit a learning disability. In addition, Russ was one of seven caucasian students in the resource room and Dori was one of three black students in the room. As will become apparent in the discussions of the findings and as may not be surprising to the reader, the blackness of the person seems to have a bearing on how the environment reacts to these individuals--and it may not only be the blackness--as will be seen in Chapter IV.

Two other students that became a part of this study were also in the educational resource room and had been selected by Mrs. Greenman for very specific reasons. Jason had repeated first grade three times in another district and had recently experienced a divorce in his family. He was living with his father while his sister lived with the mother. Jason was new to this school and appeared to need a great deal of attention. He was small of stature, but very quick in his maneuvers around the room. He was also a member of the black population at Harrison School.

Bob, the fourth learning disabled student, had been selected because of Mrs. Greenman's own frustration and apparent inability in finding a way to unlock the reading process for him. In spite of his difficulties with the written word, Bob showed an unusual sense of responsibility and exemplified a maturity not ordinarily evident in a grade school student. His frustrations with school work were apparent throughout the observations, but his ability to smile permeated any and all activities. As with Jason, Bob's parents remained attentive and were willing to work with the school.

Simultaneous to the selection of the learning disabled students, another teacher was approached regarding the availability of two gifted students to become a part of this study. Selected because of her own interest in the area of gifted as well as her awareness of qualitative research, Miss Knight was enlisted as a resource.

Miss Knight was an individual who had often called upon this researcher for assistance and suggestions in providing a learning atmosphere for her brighter students. She seemed to enjoy this type of student and had been among the first few individuals in this school district to avail herself of information and training to support her desire to work with this population. As a result of this interest, she had participated in an earlier field study conducted by this researcher, resulting with a familiarity of the methods employed by this study and a more comfortable view of having someone observe in her classroom. Through this earlier study the researcher had gained a familiarity with Miss Knight's classroom procedures, her teaching style, and her manner of relating to her students and her peers.

Although Miss Knight taught third grade in a different building, she was still part of the Kingsville School System. Her school, however, does differ from Harrison. Barrington Elementary School used to be one of the system's largest elementary schools with a student population of over 400. It is located well in the center of the community, surrounded by well kept homes, and is situated directly across from the most affluent housing community in this suburb. The school population is largely made up of students from these homes, although a few members represent the less prestigious duplexes and the smaller, older housing section. The attendance boundaries of this

particular school exclude any low income government housing or trailer park residents.

Although no formal testing was practiced as a means of identifying gifted students, this school district relied upon teacher recommendations to fit students into such a category. Miss Knight, however, was aware of two students who had been formally identified under the auspices of private testing. Their cognitive abilities had also been recognized by other teachers and Miss Knight had attempted to direct her learning opportunities to encompass these special abilities. Rob and Brian, as they will be called, came from highly educated families. Both sets of parents were professionally employed and remained actively involved in the lives of their children. Each student also had a brother. Brian's brother was his twin. As will become evident in Chapter IV, Rob and Brian both enjoyed learning, but each had their own style of approaching the task.

2. Procedures Used

Entry into the site at Harrison and Barrington Elementary schools had been negotiated with allowances for mobility in the classroom. However, as visits became more continuous, and perhaps, even before they did, the possibility of being treated as an aide, or as another teacher were evident if movement around the room were practiced. Both classrooms were accustomed to having teacher aides or student teachers and it appeared imperative not to identify with these roles. To listen,

observe, record, and analyze would be quite limited if working with students in a teacher role were encouraged. Even from initial visits the students smiled and offered receptive comments. Occasionally, hugs were received during these periods of observation. For some, the researcher's role as a teacher was more real than for others. It was tempting to respond to students as a teacher and, at times, that did happen, but direct involvement with the students was purposefully limited. The quality of the interaction was not to be altered through such participation. It was also imperative that the researcher be free to focus attention as chosen, and not to have observational capacities limited by the need to participate.

Data analysis occurred throughout the course of study in an attempt to discover "key linkages" between the phenomena occurring in the classroom (Schatzman & Strauss, 1973). It is within these key links that the overriding patterns, or metaphors developed. Although their interpretation and analysis were anticipated, it was not always clearly evident how the patterns connected. Continual checking and communication with knowledgeable colleagues was necessary to assist in keeping the process valid and assisting in shaping the analysis.

Although the research on which this study is based was primarily gathered through participant observation, there was considerable variation in the way in which the observation was carried out. In the school classrooms

the researcher sat off to the side and observed and took notes during several months of data collection. The students were followed wherever they went during a portion of their school day, from their assigned classroom to mainstreamed academic classes, music classes, homeroom classes, assemblies and recess periods. The bulk of the classroom data came from this process, but in addition, informal interviews of the teachers in these particular classes were repeatedly conducted.

During some of the visits audio tape recordings were attempted and one video-tape was made to facilitate "revisiting" and analysis. Field notes were recorded on site and transcribed immediately on completion of each day's visit. Thoughts and reactions were added and classified separately. All methods were employed in order to assure the procedure known as "triangulation" (Gordon, 1980), whereby one data source is cross-checked for validity with what has been learned from other sources.

Contact with parent ranged from telephone conversations to substantial sessions held either in the school setting or in their homes. These activities consisted of mixing varying degrees of participation with observation, and informally questioning individuals about whatever was necessary to make sense of their views and knowledge of their children.

As an added component a learning style inventory was administered to each student specifically observed and

attempts were made to find other "learning disabled/gifted" students who might also take this inventory for comparative purposes. Gradually students with these labels began to emerge, but dealing with them was beyond the objectives and scope of this paper and will be addressed in further study by the researcher.

At the core of the data collection were periods of alternation between observation in the educational resource room, the "mainstreamed" classrooms (both for the so-called "learning disabled/gifted" and the "learning disabled") and the regular classroom of the two "gifted" students.

Harrison Elementary School housed the students in the educational resource room and mainstreamed them into other classrooms within the building. Barrington Elementary School became the site for the two gifted students who were situated in a traditional classroom setting. In both schools observations were carried out, for the most part, at the third grade level.

In addition, it should be noted that both schools share a familiarity with special needs students. Both house an educational resource room. Barrington provides for the early (grades K-2) elementary level or students and Harrison serves the upper elementary (grades 3-5) students. Additionally, Barrington maintains a classroom for emotionally impaired students.

The selection of Dori and Russ (the two learning disabled/gifted students), Bob and Jason (the two learning

disabled students), and Brian and Rob (the two gifted students) had been accomplished with the recommendation of knowledgeable teachers, discussion with parents, interviews with the students, work sample analysis, and guarded amounts of testing results. The two primary teachers, Mrs. Greenman and Miss Knight were also carefully chosen on the basis of their resourcefulness and expertise in the field of education.

Materials

Learning Style Inventory (LSI)

The LSI consists of 104 statements that surveys individuals' preferences in each of 22 different elements. Subjects are required to give their immediate response to each question, and may have the exam administered orally or in written form. Dunn, Dunn, and Price (1985) report:

> It should be noted that many of the questions in the instrument are highly subjective and relative. That, of course, is precisely why they contribute to an understanding of how each student learns in ways that differ from his or her peers. (p. 1)

The LSI reports scores for 22 different areas. Each subscale score represents the degree to which a specific characteristic is preferred by the individual and can range from 20 to 80.

> Individuals having a standard score of 60 or higher have a high preference for that area when they study. Individuals having a standard score of 40 or lower-with the exception of Learning Alone/Peer Learning and Evening/Morning which are on a continuum-have a low preference in that area when they study. Individuals having scores that fall between 40 and 60 indicate that their

> preference is neither high nor low in that area; those elements are not critical to their learning styles. (Dunn, Dunn, & Price, 1985, p.7).

Recent national focus on the gifted/talented has led to numerous investigations concerning how such students learn (Cross, 1982; Dunn and Price, 1980; Griggs and Price, 1979; Kreitner, 1981; Perrin, 1984; Ricca, 1983; Stewart, 1981; Wasson, 1980). These investigations evidenced consistent patterns of independence, self (internal) motivation, persistence, strong perceptual senses, and the need for options among: (a) high IQ (b) musically and (c) artistically gifted students. They also verified that the gifted strongly preferred independent studies and projects to lectures or discussions. When interviewed, gifted students explained that their teachers spoke "too slowly"; they also complained of the repetition and boredom of lectures.

Price, Dunn and Griggs (1978) conducted two studies that attempted to verify the ability of the LSI to significantly discriminate between gifted and non-gifted subjects. The following year, Wild (1979) determined that students with learning disabilities exhibited significantly negative preferences in four categories. The four areas were persistent and non-persistent, adult motivated, prefers learning with adults, and prefers learning in several ways. The non-learning disabled students were more persistent and more adult motivated than the learning

disabled students. They did not prefer to learn with adults, while learning disabled students did, and they preferred learning in several ways sociologically while the learning disabled students did not.

Another investigation by Mitchell (1980), attempted to identify which of the LSI variables significantly discriminated between students identified as having learning disabilities and those identified as not having learning disabilities. A total of six LSI variables significantly discriminated between the two groups. The learning disabled student preferred to learn with peers in a warm environment. The non-learning disabled students preferred to learn kinesthetically, and were more teacher motivated, responsible, and persistent than their counterparts.

Methods of Data Analysis

In descriptive research, data analysis is ongoing during the research and continues for months afterwards. The methods of data analysis in this study are essentially those described in James P. Spradley's Participant Observation and Leonard Schatzman and Anselm L. Strauss's Field Research. These methods involve 5 basic steps:

1. Build a baseline description of the culture. Comparing, contrasting, aggregating, and ordering constitute the processes by which a baseline description of the culture under study begins to build. The general questions asked are: Which things

are like each other? Which things go together and which do not? The data that have been gleaned from the different methodological processes are weighed against each other using a procedure know as "triangulation" (Gordon, 1980). In this process, what has been learned from one data source is cross-checked for validity with what has been learned from other sources. Instances of disconfirming evidence as well as confirming evidence are sought in order to help the researcher make a stronger argument for hypotheses which have been made (Erickson, 1986).

2. Identify Key Linkages. From the baseline description of the culture and from the rest of the data, the researcher must identify "key linkages." These are recurring themes that run through the data. It is within these key links that the overriding pattern, metaphor or model develops and the theoretical constructs develop (Schatzman and Strauss).

3. Formulate and Test Assertions Related to these Key Linkages.

Assertions are general statements about the data that a researcher suspects to be true. These assertions must be tested against the data. Which instances support this assertion? Which do not? Does information from interviews, artifacts, and other sources help warrant this assertion? Is there any other possible

interpretation of the information being explained by the assertion?

4. Revision of Assertions.

Those instances not fitting an assertion are submitted to a discrepant case analysis. The result will then be a rejection, modification or acceptance of the assertion. Modification, when it occurs, should result in a higher-order assertion that explains more of the data.

5. Repeat Steps 4 and 5.

The formulation, testing, and reformulation of assertions continues indefinitely until the researcher achieves satisfactory assertions or submits to redirected efforts.

Once the analysis is completed, then the researcher must write a report in accordance with the established standards of ethnography. The external validity and the reliability of the study depend largely on the methods used for data collection and analysis and also on the thoroughness of the research report. It is expected that an ethnographic report will include detailed descriptions of the following (LeCompte and Goetz, 1982):

a. The site and how it was chosen.

b. The informants of the study and how they were chosen, particularly those who acted as key informants for the researcher.

c. The role of the researcher at the site and the relationships that existed or developed between the researcher and the informants.

d. The methods of data collection.

e. Representative and exemplary narrative vignettes related to the assertions of the study.

f. Representative and exemplary quotations related to the assertions.

g. Information about the data that was not presented in the report either because it was deemed irrelevant or because it was not available to the researcher.

This information can help provide external validity by allowing the reader to assess the degree to which the researcher's findings can be applied to other situations (LeCompte and Goetz, 1982). Since the situation studied will not occur again, total reliability can never be achieved in a qualitative study. The possibility of replication is further precluded by the fact that the researcher inevitably becomes a part of the situation studied. Reliability is, however, enhanced by the publication of the information listed above. That way, the same methods can at least be tried at different sites. Also, the conclusions of the study can be evaluated in terms of the internal consistency and plausibility of the report. Internal reliability should also be enhanced by

allowing peer examination of mechanically recorded data (LeCompte and Goetz, 1982).

Anticipated Value of the Inquiry

By describing how "learning disabled/gifted" students relate to the utilization of learning styles information, what they know about the way they learn, and what kind of social network develops around them, this study may help answer some of the key questions that confront teachers and parents as they encounter this special type of student in classes and classrooms. One of these questions involves the meaning of learning styles: what can we learn about different styles and their relevancy to these students? Can we discover ways to remove a few "roadblocks" to their learning?

A related question that remains unanswered concerns the placement of learning style instruments or methods in the curriculum. Many districts have ventured forth to begin this process at the interest of particular teachers, but very few have utilized it at all grade levels. In fact, in a survey of 2,000 teachers and administrators in the New York metropolitan area, for example, less than 25% were aware of the relationships between learning style and brain behavior (Zenhausern & Dunn, et al., 1984). The present study will describe the kinds of events that may occur when learning style information is used with these special needs students and what, if anything, can be discovered about their learning styles. This information should have

practical value for educators as well as for parents and the students themselves. It might even help to discover some things that the labels, inadvertently, have hidden.

Though the available research about "learning disabled/gifted" students is limited at best, the research on learning styles is becoming evident in impressive quantities, but the combination of the two categories appears to be void of substantiated studies. Studying this particular population should produce insights and hypotheses that can help guide experimental research in this very important field.

CHAPTER IV

Findings

In the course of this chapter, the reader will be led through the observations that depict the interaction with age mates and the school environment of these special needs students. In addition, the remaining sections will delineate classroom integration, patterns of socializing, expectations and pressures, and the preferred learning styles of this select population.

Interaction with Age Mates and the School Environment

Students formally identified as learning disabled and placed into a resource room must learn to interact with a new environment and different structure. In the Kingsville school district the procedures followed are not unlike other districts and school systems. The education resource rooms are, however, full time placements for the students. The possibilities for mainstreaming students into regular education sections are prioritized and carried out whenever and for whatever the individual student is capable of handling. Such an endeavor can be expected to have a significant impact on the social context developed under these circumstances.

State guidelines mandate the number of students in a resource room at any one time in an effort to provide the climate for individual attention. Through this process it is assumed that the severity of each case can be addressed

by the teacher and the assisting aide.

In Mrs. Greenman's educational resource room the number of students present varied with each visit, and towards the end of the school year dwindled to only a few working in the room at any given time. During the course of the observations one student was transferred to the middle school and a new student dropped out shortly after arriving. Towards the last two months of school another new student was integrated into the room and remained to the end of the year.

Mrs. Greenman's classroom was located in the original section of the Harrison building. A new section had been finished last year and extended down a very long corridor to the west of the resource room. To the immediate east of Mrs. Greenman was the library and opposite her room was the Title I math teacher and one of the two third grade classrooms. The resource room was on the north side of the hall and through its two windows looked out onto the bus garage and parking lot for the district's transportation vehicles.

The room itself appeared calm and unpretentious. Its brown vinyl covered north wall remained void of any student exhibits or decorations. Cardboard boxes housed various files on the counter area and the work areas. A number of different work areas were readily accessible for the students and teachers. Two wood constructed dividers might

serve as privacy areas for individual students and the old style desks were arranged in three short rows in the center of the room. The rows were surrounded by wide aisles leaving ample room for mobility and work space.

Although the teacher's desk appeared cluttered and the reading work table was piled with books, papers, and supplies, a definite pattern of organization and structure existed. Students were assigned individual work folders and all were accountable for different activities while Mrs. Greenman and her aide worked with students one at a time. Even from the earliest observation notes this work atmosphere became evident.

The field note entry of 1/14/87 states:

> . . . . They were all working on something. . . . Dori was in her seat at this time working on some papers that she had on her desk. The teacher was working with a student the same as she was yesterday at this round table . . . . She calls up Russ, and then she sets up a computer program for someone else to use while she is doing this. . . . She goes through each of the pages that had been assigned to him and comments about them . . . .
>
> (N. p.6, # 40-44)

More noticeable, however, were the interactions that occurred with age mates and the school environment in general. Distinct behavioral characteristics were evident, allowing the students to fall into generally two types, quiet students and active students. These categories also correlated highly with non-distractible and distractible characteristics.

Learning Disabled/Gifted Students and Their Environment

From the earliest of field note entries Dori's work habits, in particular, began to take on a distinct pattern. For example:

> N. p. 6, #42 . . . . Dori was in her seat at this time working on some papers that she had on her desk . . . .
>
> N. p. 19, #125 . . . . She (Dori) appeared the least distracted by the activity and sounds of the other students . . . .
>
> N. p. 21, #134 . . . . Dori is working quietly at her desk . . . .
>
> N. p. 61, #321 . . . . She seemed to be working quite intently on something . . . .

Dori was recognized as having a verbal ability beyond that of the other students in the room. She was often called upon to assist in defining words or explaining meanings. For example, on p. 24 #12 the field note entry provides a description of this occurrence:

> The student working with Mrs. Greenman was reading out loud to her. She was encouraging him to read it (He ran from the shed). Mrs. Greenman stopped him and asked if he knew what a shed was. He answered with "no". Mrs. Greenman then asked if he knew what a shack was. Again he said he didn't. She asked a student nearby if he could tell them what a shack was. He said he couldn't. Mrs. Greenman then called on Dori, who was not sitting close to her. Dori answered freely to explain what a shack was. Mrs. Greenman asked her. "What might you find there?" Dori: "old rakes, stuff like that . . . ."

In addition, the field notes on p. 24, #162 and #163 give yet a further perspective on Dori's verbal abilities:

> . . . . In the discussion that now begins with the class, Dori contributes quite a bit. She's raising her hand most of the time. She remembers the term "idiom" and teacher says, "Dori, must have put that in her long term memory. Yes, it's been a long time since we've done this." There's a discussion that continues about what "back to back" means. Teacher gives an example. Dori says, "right after each other." She says it really quickly without being called on or having raised her hand . . . .
>
> (N. p. 24, #162-163)

Mrs. Greenman points out on tape 4 #227 (T.S.) that Dori was the one "who ended up having the vocabulary . . . reflection . . . on the story".

Dichotomous to this ability, however, is Dori's frustration in recognizing the written word. A field note entry of 2/11/87 reads:

> . . . . Dori was called to read. The chair is still sideways. Dori sits on it with her left leg under her bottom on the chair. She is using a red acetate sheet and the teacher is guiding the words with her green pen. Mrs. Greenman had cut up some acetate sheets into strips and there were two laying in front of Dori. She begins to play with them with her right hand. Her left hand is resting on the chair and is supporting her body as she leans on that side. She twists the strips and manipulates them as she is reading and following the green marker that Mrs. Greenman is using. She gets caught on one of the words and reads "mothers dog" instead of "mother dog". Mrs. Greenman stopped her by stopping the pen to allow her eyes to focus on that one again and then Dori uses her own finger as well as the teacher using her pen to stop at that particular word. There seems to be some difficulty with the b and the d, and Dori stops and is asked to use a system to help her identify which is the b and which is the d. First, Dori just guesses. She does not appear to use any tools that she might have had in order to find out which it is. After a few seconds, however, she begins to manipulate her fingers and tries to form the b and the d as if she were

> writing the word "bed." She is still not sure which it is. . . . She appears to guess. Mrs. Greenman does not let up. She convinces her that she must use some of these tools even though she may not want to. After a few seconds of frustration and trying to get her fingers manipulated to distinguish the b and the d, she is told which it is. She finally seems to grasp the relationship. Mrs. Greenman helps her to shape the fingers, one in the form of b. The other in the form of the d. She explains to her where the word begins, that b begins the left side. Dori puts her fingers down and just says "dang." She appears very sullen with a frustrated frown on her face. A few tears begin to fall. She hides her face in her hands. Teacher hugs her as she's explaining that she is not angry with her but very frustrated. She repeats that. Dori pulls away from her but is able to regain her composure. Mrs. Greenman begins to read the next page. Dori is watching and appears attentive to it.
>
> (N. p. 47-48, #261-267)

Mrs. Greenman later explains that Dori is a very strong willed individual and that she has a lot going for her, but does not, at this time at least, want to rely on the very basic tools that she needs when she is unable to distinguish one letter from another letter. Her vocabulary is far advanced, decidedly beyond what she is reading, and it is a source of frustration to her to be detained with smaller words and not be able to decide whether it is a b, d, or a th, or whatever else the case might be. (N. p. 51, #282).

Dori had been recommended as one of the students in the "learning disabled/gifted" category. She was recognized as being particularly "artsy and very creative," according to Mrs. Greenman (N. p. 1, # 5), although these abilities

would not appear on any cognitive abilities measure. During an art activity in her mainstreamed classroom for example, it became evident that other students recognized this ability and came to her for direction. (N. p. 188, #834) reads:

> . . . .A black female student comes over to Dori with a paper and a pattern. Dori holds it up and demonstrates how to draw and then the girl leaves. It appears that Dori is giving instructions on how to do the page exactly the way that she had done hers. Evidently, she seems to have some ability that the others admire . . . .Two other students come and they stop to watch her briefly . . . .

Moreover, when Dori completed her art project in N. p. 190, #838:

> . . . .She takes it over to the two girls that had stopped her before (to inquire how she did her first picture) and shows them her finished project . . . .

An additional entry noted that she appeared proud of what she had done (N. p. 190, #838). Mrs. Greenman also emphasized:

> . . . .That she (Dori) does like to show the others that she does have this kind of a talent, and "yes, she's very proud of what she can do."
>
> (N. p. 190, #841)

It was a curiosity to discover that the second "learning disabled/gifted" student exhibited similar characteristics. According to Mrs. Greenman:

> . . . .The other student, Russ, had exceptional thinking abilities and could invent things such as a clever mouse trap that featured a ramp and methodically provided for a mouse to slide down the ramp and drown.
>
> (N. p. 1, #5)

In a taped informal dialogue with Mrs. Greenman of 2/4/87 a discussion concerns Russ' involvement with a particular art activity. He had been observed intensely sewing on a burlap square and had demonstrated a keen sense of focus on the project. Not only had he stitched the pattern on the burlap, but Russ had designed the outline of a rabbit as well.

Researcher:	. . . . You know, nothing was distracting him. He was busy sewing or whatever he was doing.
Teacher:	Yes, that's his forte. This is his drawing as well.
Researcher:	Oh, wow.
Teacher:	I saw him put his hand down and draw around his fingers for the ears.
Researcher:	And look at the pink in the middle there. And here he's got the nose and the eyes. Even the feet--the detail on those.
Teacher:	And look at all the time he took on the tail.
Researcher:	Yes, to make it look like ( ).
Teacher:	Yeah.
Researcher:	It's really stitched.
Teacher:	Yeah.
Researcher:	It's really wonderful. Now I watched him just working. He spent a long time just threading the needle.
Teacher:	Um-hum, He didn't give up.
Researcher:	No, No. He didn't . I mean, he was just so intent on it, and he wasn't frustrated. You, know, he was just doing it.
Teacher:	Um-hum, I know.
Researcher:	Terrific.
Teacher:	It's rare that you would get a third grade kid with this kind of . . .
Researcher:	Artistic achievement.
Teacher:	Sure.
Researcher:	And even the control of a needle.
Teacher:	Yup.
Researcher:	You know those aren't easy.
Teacher:	And there's nothing . . .

Researcher: No, I know it. Burlap is difficult to work with , too, as far as not having the material move on you. Is his --does he have a lot of skill like that with . . .

Teacher: Art? Oh yes, oh yes definitely. That's one of his fortes. Whenever they do anything artistic in here, his stands in a class by itself.

(N. p. 44-45 #251-254 TS 4)

On another occasion, Mrs. VanLaan, Russ' mainstreamed teacher, had referred to Russ as having particular talent in the area of art or crafts (N. p. 88, #420). She shared a particularly impressive project one day and commented on how articulate his work had been and how his fine motor skills seemed to be so perfected that he was able to manipulate very fine details in his work (N. p. 169, #760). She proceeded to display the work of what she considered to be a typical third grade student. Next to it she placed Russ' design. Although his work had not been fully completed, a distinct and immediate difference was evident between the two pieces. Russ' work appeared to be deliberately planned and executed with the exact placement of minute pieces of selected torn construction paper colors. Within the ten inch paper shaped like an egg were several smaller eggs containing even smaller designs. They were surrounded by deliberate sections of small torn construction paper pieces, each exhibiting distinct colors and direction. In comparison, the paper egg of the other third grade student was entirely covered with large pieces of torn construction

paper, having several rows of alternating colors and exhibiting many open spaces where the construction paper did not cover the background egg shaped paper. In addition, Mrs. VanLaan also brought Dori's finished project.

> . . . Her (Dori's) egg had torn pieces of paper on it that were again bigger than Russ' were, but the design that was evident on that particular egg was very well defined. It was quite artistic in the sense that she had blended three different colors of construction paper together and intricately had woven a design with them. At first it appeared to consist of randomly placed pieces, but closer examination produced a visibly organized pattern.
>
> (N. p. 169, #763)

Mrs. VanLaan thought that it was very well done, but she didn't feel that it was particularly exceptional. (N. p. 169, #763). She showed all the samples to Mrs. Zimner, an administrative aspirant who had been at Harrison School for the past several weeks, and who had a background of working with gifted students. Mrs. Zimner commented on the exceptional detail of Russ' design and on the high quality of Dori's project. She felt the design on Dori's egg was a "deliberate plan, not an accident. By just the way the colors were put on the particular paper." (N. p. 170, #764). It appeared that the interpretation and/or appreciation of art was strictly based on individual preference and opinion.

Aside from Russ' special abilities in these areas the opportunity also presented itself, one day, to view him in an entirely different role within the educational resource

room. During an episode that was particularly stress producing, Russ had emerged as an unexpected leader.

At the end of January, a new student had been placed in Mrs. Greenman's resource room. During the process of integrating her into the setting it became apparent that Deidre wanted no part of it, refused all direction and encouragement, and, instead, exhibited a strong tendency toward violent behavior. Towards the end of the second week at Harrison Elementary, Deidre lost all control, becoming physically abusive and lashing out with an uncontrollable force at Mrs. Greenman and her aide. Within minutes she was forcibly constrained and removed from the classroom by the principal.

It was during these long chaotic minutes that Russ took on a big role. According to Mrs. Greenman, "He chose to be the leader in the sense that he tried to maintain stability in the classroom not only for himself, but also for the others and that he took it upon himself to be put in that role. It appears that he was very comfortable in bringing forth those characteristics in him--the leadership qualities he exemplified in the morning's event." (N. p.51, #283)

Although Russ appeared very comfortable in the resource room, the exhibition of leadership skills did not surface again during the remaining months of observations. Neither did any other incident compare to the volatile events of

that particular day. Deidre never returned to this classroom and the researcher never found out why, deeming it unwise to pry.

Learning Disabled Students and Their Environment

Throughout the duration of on-site visits and observations it was noticed that Jason and Bob, the two "learning disabled" students designated for this study, were quite active and easily distracted. Take for example, the field note entry of 5/5/87 when only three students were in the room with Mrs. Greenman and her aide:

> . . . . Jason has his workbook open at the desk where he is today, but instead of concentrating on looking at it, he plays with the fake mustache and beard that he is holding on his lap. He puts it on himself, holds it up against his face, turns around to show Robby, and then calls "Hi, Robby." He then looks at me and says "Hi, Mrs. Lux". He turns back and puts the mustache and beard back on his lap and plays with it a little bit more, handling it with his fingers . . . . Mrs. Greenman leaves to make a copy of something . . . . As soon as she leaves Jason turns to Robby . . . . and they just talk . . . . The aide looks up and says "Jason, Jason." Jason simply says, "Yes, Miss Tames?" in kind of a teasing tone. He mumbles something to himself and then he gets up to go over to the counter. He comes back to his seat, turns to Robby, then back to his desk. He hunches kind of low and mumbles something else while looking at his workbook on his desk. . . At 1:25 Josh enters the room and Jason watches him walk across the room to his desk. Then Jason turns to face toward the open door. Mrs. Greenman's room is open right now, and the room across the hall is visible. That room has its door open, too, and is Jason's homeroom. In a few seconds, however, the door across the hall is closed, allowing only a small crack of an opening. Jason moves his head now as if he's talking to himself and his jaw is moving slightly. Some sounds are audible, but exact words cannot be deciphered. Robby goes over to the aide and then back to his seat, but on the

way back he passes by Jason although it is out of his way. He punches him quickly and Jason reaches toward him, but does not get up. Jason then turns sideways and talks to Robby. He starts to crawl by the computer close to the middle desk that is between him and Robby but then he gets back on his own seat. He moves his left hand along the bottom of his desk and seems to be poking an eraser through a small hole in the bottom of the desk . . . . Mrs. Greenman goes over to him and asks him about one of the sentences he's working on Jason then writes something with his right hand. Mrs. Greenman talks to Jason and in part of the discussion she says, "You can't do a good job by switching back and forth. Come on, now, do one side first." Jason mumbles something and Mrs. Greenman continues, "Which one are you working on now?" He writes something but his left hand is still underneath the desk, and his paper apparently moves as he writes. Mrs. Greenman is heard saying "Jason, why don't you hang on to your paper?" She leaves, walking away from his desk. Jason gets up and goes to the kidney shaped table where the aide has gone and he talks to her. He then leaves the room. Although not clearly overheard, the word "bathroom" seemed to have been mumbled. Mrs. Greenman is sitting at the front work table and watches him walk out . . . .

(N. p. 363-365, #1418-1425)

This was Jason. His slight, almost fragile appearing frame was usually in motion and seemed to fit his almost mischievous nature. His eyes sparkled with activity and his black hair curled tightly around his delicate facial features. In tape 6, Mrs. Greenman talks about Jason.

Mrs. Greenman: . . . . There's this bit, even though he has this teacher pleasing behavior outwardly there is also that point where he could get away with nothing short of murder by just being very subtle and just by not being overt. And if you say sit down and he would for 15 seconds and then he would consider it well within his range to do whatever he wanted to do. He would always be within the realm of not being naughty. Right on the

border. So it's hard to see where he just let's himself be self directed and that, so I'm not sure.

Researcher: It's been interesting to watch him because he is so quick in moving or whatever. There is nothing he does slow.

Mrs. Greenman: Right, and it will be interesting to see how good he performs on field day stuff. I have a feeling that he will be greased lightning on field day.

Researcher: He well could be because within the classroom it takes him only an instant to get from one end to the other.

Mrs. Greenman: Not fast. There's a big difference between fast and quick. He is quick.

Researcher: Very quick.

(N. p. 210, #903-904 TS 6)

Bob, on the other hand, appeared much larger physically than Jason did. His large frame was noticeable and his stocky appearance would be inclined to hide the tenderness that occasionally surfaced. Mrs. Greenman had deliberately selected Bob as part of this study because of her own frustration with his lack of success. A field note of 2/11/87 reads:

> . . . . We spoke for a few minutes about the possibility of observing two other students within her classroom. She suggested perhaps, that one of them might be Bob. This was the kind of a student that she was herself struggling with, and she explained . . . . that no matter what she had tried with Bob, nothing seemed to be working to help him. She said, "Whatever I'm doing for him is not working. His fatigue and energy level is a definite factor. It takes a tremendous amount of energy for him to do his work. He works very, very hard at it, but as of this time he still has not established any sight vocabulary" . . . . She expresses her frustration that in all her years of experiences in working with learning disabled students, she's never found one quite this much of a challenge where nothing seemed to really be able to help him. This Bob, however, was not a hostile

> child. He was a very hard, hard worker. She also explained that he works in an electric company by his house. He drums up all kinds of odd jobs for himself. During one summer, for instance, he leveled dirt for them which was definitely a man-sized job, but he carried it out and stuck to it . . . . "He was a real go-getter, and he on his own, decided to pay the costs of all of his household pets. He has gerbils and fish and I can't remember what else. But it was not done at the directive of his parents. It was his very own idea to supply all of the food and supplies that he needs to take care of them . . . ."
>
> (N. p. 54-55, #295-298)

Mrs. Greenman related another example of Bob's tenacity for taking on responsibility.

> . . . . During the recent Christmas season there was a Santa's Secret Shop held at the school where the students might be able to do some relatively inexpensive shopping for just a couple of days. Bob had earned his own money to do some shopping, and he did. After he finished his shopping, he realized that he needed a few more gifts. So the very next day, which would have been the last day of the Santa workshop, he shoveled snow before school in order to earn some more money so that he could go right in the same day and finish his shopping. And that's exactly what he did . . . .
>
> (N. p. 55, # 299)

Bob's efforts in the classroom, however, were laced with restlessness and distractibility. He concentrated in very short attention spans and exhibited a total lack of effort when he was asked to read material way beyond his capability in his mainstreamed classroom. An entry of 2/25/87 reflects on Bob's work activities in the resource room:

> . . . . 1:04 P.M. Bob entered the room. He sits in a desk directly on the other side of Russ'

> divider . . . . At 1:09 the aide enters. Bob gets up and asks her something right away. He says something to her and then goes back to his desk to get something and sits with her at a table in the front of the room. . . . At 1:18 the aide tells Bob to go back and work on it some more. Bob frowns a little, but watches her get up and go to another part of the room . . . . Bob gets up and goes to the back table where the aide had gone. "I need help, " he says. And she tells him, "You can figure that out." She continues to help another student. Bob stays by her, leans way over across the table, then sits on the floor. Within seconds he kneels down on one knee, rises, and again leans way over on the table . . . . The aide eventually talks to him and encourages him to go figure it out himself . . . .
>
> (N. p. 61-62, #322-327)

Although Bob's restlessness was evident throughout the months of observation, his frustrations seemed to escalate when asked to participate in a reading activity during social studies in his mainstreamed classroom. The students were paired together by a game of finding who had been given a button that matched theirs. They were then instructed to find a spot in the room and read a certain number of pages in their books about Michigan. Bob had not bothered to look for his partner, but a student had found him. The student proceeded to move his desk next to Bob's, but Bob begins to walk toward the door and announces, "I'm going out in the hall." (N. p. 199, #870)

The field note continues:

> He walks past the table and trips on someone's feet as he passes. There are two students sitting under the table beginning to read. Bob turns

around and kicks the feet right under the table and then he proceeds out into the hall. The other student does not say anything but simply follows him.

It appeared that Bob was able to lead the other student out the door, but it remained to be seen how, or if, he would actually attempt to read a grade level social studies text. In the continuing field notes, Bob's avoidance behaviors appear very characteristic:

. . . . He (Bob) is sitting in the hall with his feet outstretched in front of him and leaning back against a student locker. The other student is reading out loud from his book. Bob is watching his book, but chewing his gum quite hard. This particular student stops reading after one and a half pages. There are few illustrations and many words on each page . . . The student looks at him and Bob uses that as a signal for him to begin reading. He takes his book but his reading is very choppy and halting. During the time he attempts the reading he is rolling a ball on the ground with his right hand and keeping it moving constantly. He says, shortly after beginning, "I'm stuck right there." He then lifts up his left leg slightly to make a better support for his book. He holds his book with his left hand and his right hand is still on the floor with the ball. Bob says, "What?" And the other student replies, "traded." The student is following along with his finger on his own book and assists him often but then loses interest in following along as it is taking Bob so long and he seems to be stumbling on every word. This student is sitting on his knees and hunched over. His book is on the floor. Finally he leans over so that his elbows are on the floor, too, and he rests his head on his fists. Bob looks at the student for confirmation of yet another word, but he doesn't get any response so he just keeps mumbling words. The student, by this time, is not watching where he is and Bob says "huh?". The student finally says "much," after having found the place where Bob was. Then Bob repeats, "much" and continues

> to finish the sentence. He is still, at this time, rolling the ball with his right hand. At 2:58 P.M. (a few minutes after starting) Bob tells the student to read. Bob's mouth begins to move in a chewing motion. He lowers his left leg and he has his book open flat on his lap at this time. The other student begins reading immediately, almost glad that it's his turn and he can just keep right on going. This student reads much faster and smoother than Bob and the words begin to make sense again. Bob bends his right leg to shift positions and then he raises both knees briefly to support his back. He stretches his right leg out again, but leaves the left leg up and then he spreads both of them out. He has a ball and a pencil in his right hand now. He watches as three people come down the hall and go into the teacher's lounge, directly opposite this classroom. The other student, however, continues reading without seeming to notice the activity. Bob shifts positions again and is not watching at all where the words are in his book. His hands are now both on his book and he plays with his eraser on the end of his pencil. He scoots it along the carpet a few times and then puts it on the ball. It is evident now that there are two balls resting in the fold of his book. One is red and one is clear. He spreads his legs apart slightly and puts one ball on the floor between them. Part of his legs are resting directly on the book. He bounces the ball several times right by his book, and then tells the other student he can keep on reading when they go on to the next page . . . .
>
> (N. p. 200-201, #872-877)

In the resource room, Bob avoided reading tasks as well, and evidenced a distinct struggle with words. It had been decided, however, that his physical stature more closely matched that of an older student, and so he was placed in a fourth grade classroom for social studies. His age, likewise, reflected a need to associate with older students, but his learning disabilities prevented

integration with his real age peers. Whether in the resource room or mainstreamed classroom, however, the one characteristic that seemed to be outstanding with Bob was his constant smile. He used a smile to show pleasure as well as to hide discomfort or embarrassment. Most of all, the smile appeared during any kind of interaction with others. Take, for example, a field note entry of 4/14/87 in a mainstreamed session:

> . . . . Bob is asked about some solutions to the underwater problem. Teacher asks, "Do you think we could solve all of these problems?" Bob shakes his head with a shy grin and kind of slowly replies, "Nope." He look a little uncertain . . . .
>
> (N. p. 172, #774)

And a note of 4/30/87 in another mainstreamed session:

> . . . Sebastian, Josh and Bob talk together briefly and Bob smiles at them . . .
>
> (N. p. 342, #1348)

Gifted Students and Their Environment

In addition to the resource room students, two "gifted students" at Barrington Elementary also fell into the categories of quiet and active, or distractible and non-distractible students.

Miss Knight's classroom was located on the inside portion of Barrington Elementary School. The gym and library sat in the very center, surrounded by one set of classrooms, a hall, and then another set of classrooms.

The outer circle of rooms had windows looking out, but the inner set of classrooms could not take advantage of any natural light. They did, however, have the advantage of having air conditioning during the hot months.

Normally, the preference for a classroom with windows is expressed by many teachers, but the activities in Miss Knight's classroom hardly provided any time to be aware of the lack of daylight. It was always a busy place and at times it was quite frustrating not to be able to capture all of it during the period of observation.

Even from the earliest entries the mobility of the students and the manner in which they conducted themselves during class time was noticeable. They appeared at ease going about their various activities while Miss Knight worked with them, read to them, or directed their activities.

During a time of reading to the students while sitting in the center of the room towards the blackboard, Miss Knight allows for quiet activities or work. A field note entry of 4/10/87 states:

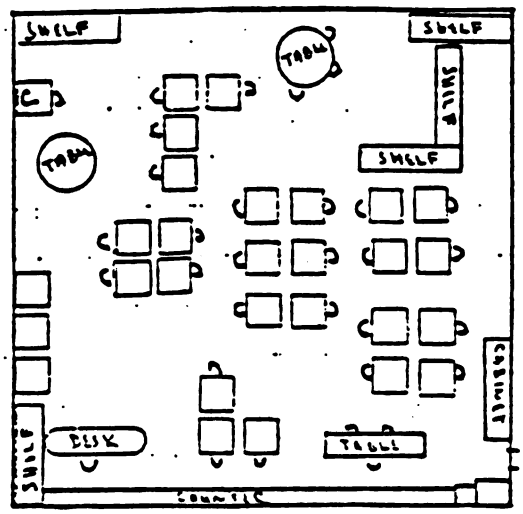
> . . . . She (Miss Knight) begins to read the story and two students move up to sit right next to her. Another student also moves up and sits directly in front of her. The students are working on various things while they are being read to. Two girls are washing their desks. Many are writing, but I notice that Brian is just sitting. He does not have any work in front of him although it appeared that he had a toy at one time.
>
> (N. p. 163, #742-743)

This pattern of conducting a classroom seems to have existed for many years. It was present in a research project two years ago as well. Consider a field note entry of 1/9/85:

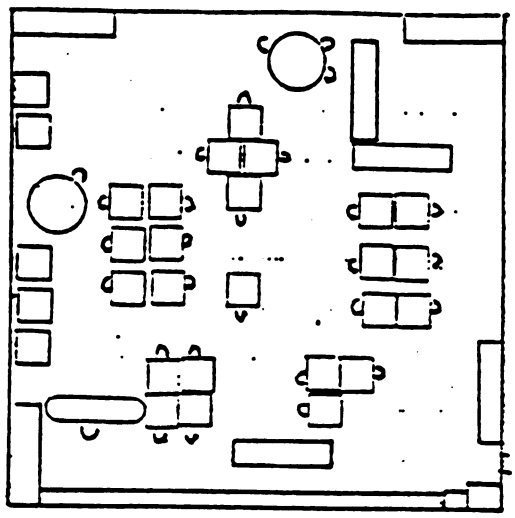
> . . . . Miss Knight is reading to the class from a library book. She is seated close to the student desks and her chair is away from her own desk. The students are working quietly on different projects. Some are working on art projects, making tissue paper snowmen. Others appear to be completing a work page for math. They are coloring portions of their page and I can faintly see some numbers on the pages. A design appears when the coloring is finished. A group of four students is working at the computer, keeping their voices low and their faces to the computer. The desks are arranged and grouped randomly . . . .
>
> (N. p. 1, #1 [85])

The activities changed throughout the period of participant observation, but there was always movement, or mobility, evident. This was also noticeable in the seating arrangements. They were often changed as indicated in the diagrams of Figure 1.

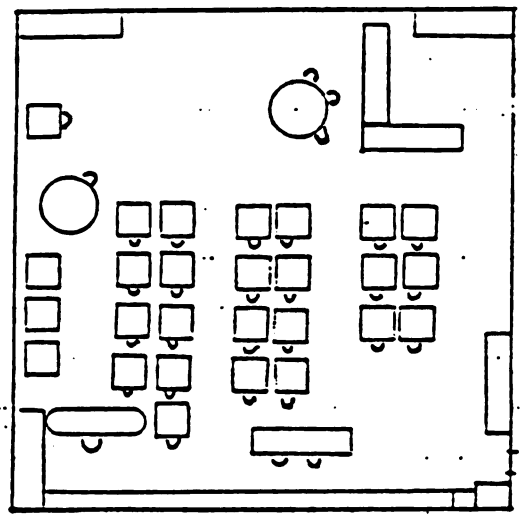
Samples of student work were displayed on the cupboard doors and on the tagboard strips in the hall outside the classroom. Occasionally, there was student work displayed on the bulletin boards, but most of the time those were used to depict themes of study, a monthly calendar, a study emphasis, or a challenge activity. The extra tables in the room also housed displays and/or special books and materials. A research memo of an earlier study in this classroom seems to reflect these thoughts:



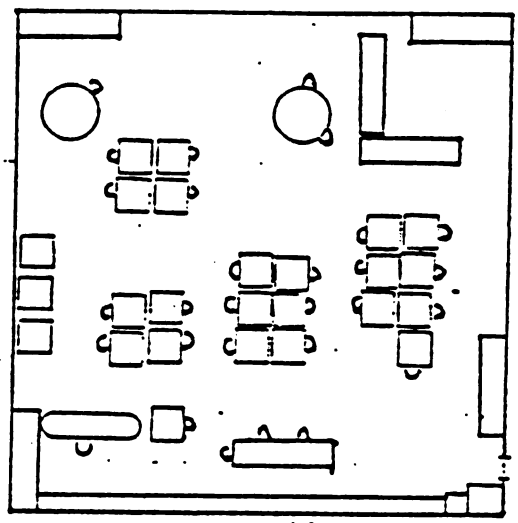
1/9



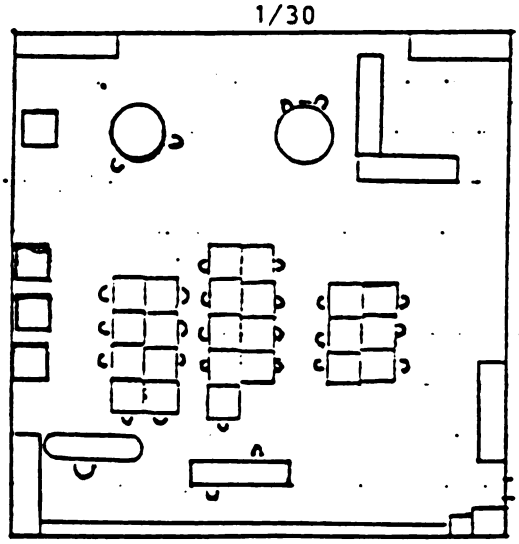
1/17



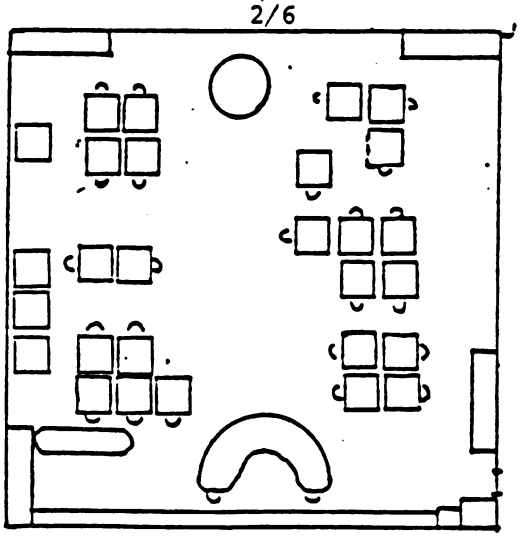
1/30



2/6



2/13



5/11

Seating Arrangements in Miss Knight's Room
Figure 1

> . . . . The room appeared to be a busy room, but the emphasis did not seem to be on displaying elaborate work. I sense that the emphasis is on producing creative things in daily work rather than displaying it.
>
> (N. p. 20, #134 [85])

Miss Knight's own use of space reflected mobility as well. She would often sit by students while reading to them, and continually circulated around the room while they were working. Rarely did she use her desk. Her "teacher" chair had wheels and was often steered to various locations in the room.

Brian and Rob appeared in total contrast of each other even from the initial observations and contacts. Brian did not appear to fit into the pattern of the mobility evident in the classroom, but did serve as a complement with an opposing preference. He was a very quiet individual, preferring to observe and reflect for the most part. He followed instructions methodically and would often become absorbed in reading something that the others simply put aside. His activity remained basically confined to his desk and rarely did he move much in his chair. He seemed to have a need to be very thorough in his activities. During the class lessons of 3/20/87 for example, Brian was sitting at his desk working on his Weekly Reader, a small publication of news and interesting events, or topics for grade school students. The students had been instructed to complete portions of it, and had done so as a class.

Brian, however, continued to work on it even after other students had stopped. The teacher instructed them to move their desks back to their regular location, signaling the end of a particular activity where the desks had been moved away from each other. Brian needed to move only a little in order to arrive at the location where he began. He continued to write in the Weekly Reader, but paused and listened to Miss Knight talk about another activity. He looked at her briefly, and continued to hold his pencil right above the Weekly Reader. When instructions were completed, Brian continued to write in it. Within a few seconds, however, he closed his Weekly Reader, looked at the cover momentarily and then opened it again. He ignored the other paper that had been given to him for the next assignment. His eyes appeared to be reading the small booklet again.

Rob, on the other hand, was actively mobile and seemed to need the freedom of movement. Throughout the visits he appeared to be verbally fluent as well. He often talked to those around him as well as responded to class discussions and activities. Take for example the field note entry of 5/11/87:

> . . . . She (Miss Knight) is showing them how to develop a mind map for remembering the circulatory system of a shark. The students are copying this diagram (from the overhead) onto their own paper as they review the different components of the system together. Miss Knight stops and usually waits for them to finish copying each part that she puts up on her own mind map on the overhead.

> Rob seems to be able to keep up very quickly and seems aware of where everything is in the circulatory system. In fact, while the rest of the students are copying, he tips his chair backwards and rocks on it slightly on the two back legs. At one point he says, "A unicorn, a unicorn" and he places his pencil directly on his forehead as if it were protruding from his brow. He looks at the two students seated in his particular desk grouping and then he looks around the room to show others. He is sitting where there are five desks together. However, there are only two other students besides him at the particular group today. Rob then goes over to the kidney shaped table and briefly looks at the paper there. He gets a drink at the fountain close to this table. He returns to the kidney shaped table, thumbs through a book and then goes over to another desk. He stares briefly at it before returning to his own. Rob puts his knees on the back of the chair and sits on the seat with his left leg on the ground. He tips his chair over so it is again resting on the two back legs . . . . At one point Rob says, "You forgot the spine. No you didn't." Miss Knight looks at Rob and replies, "Don't you add to it." She had asked another student to respond, and Rob had somewhat blurted out the answer. At that point Rob clasps one hand over his mouth and he looks at Lionel by him. They talk a little bit . . . . He raises his hand for something else, too, and says, "Oh, I wanted to say that" when another student was called upon . . . .
>
> (N. p. 401-402, #1545-1551)

During the administration of the Learning Style Inventory, both students exhibited distinct characteristics associated with distractibility and non distractibility. The pattern followed that of the classroom observations and were recorded, in part, in the field notes of that day:

> . . . . Rob finished the first side first. He turned his page over and said, "Oh my gosh!" The back side was completely full of statements. The

> front side had been divided between the beginning statements and a large section for general data and codings. Rob shifted around in his chair in a rather uneasy manner as if deciding whether or not he was up to finishing this whole page. He asked for a paper to guide his eyes (after initially refusing one) . . . . In just a couple of seconds after that, Brian turned the page and just kept going. He did not appear to be particularly bothered by the length of the instrument . . . . Rob stopped with the third or fourth statement on the back side and began to look around the room. It appeared that he was not certain that he really wanted to finish this whole thing or perhaps thinking that maybe it was just too long for him. As he reached item number 69 out of 104 questions, he stopped, got up and went over to the drinking fountain that was located in the room and got a drink. He came back, sat down and began to answer a few more and then used the eraser. He had used the eraser several times already on this page . . . . In a couple of seconds he put his head on his left arm which is on the table at this time. He continues to darken the circles for the answers. He is appearing restless, shifting back and forth in his chair, still with his head on his arm. He lifts his head in a few seconds, however, and shifts his paper, but still continues to work on it. Another person enters the room at that time and leaves something on the teacher's desk. She hums something just slightly and Brian gives her a quick glance, but then continues his task. Rob does not respond at all to this and now appears to be toward the bottom of the page. He appears more intent now to finish . . . .
>
> (N. p. 100-101, #474-480)

Unlike the antiquated, bespeckled, frail, and unsocial stereotypical image of gifted students, Rob was of average height, and even outweighed his classmates considerably. He usually wore sweat pants and tee shirts with white athletic shoes. His appearance was always casual and his tee shirts were frequented with advertisements or

insignias. On only a few occasions did he wear a different type of clothing. It was on those occasions, however, that a considerable discomfort was noticeable. Take, for example the field note entries of 5/11/87 when Rob wore a pair of jeans and a red tee shirt:

> . . . Rob goes over to get a drink, pulls up his socks and then his pants . . . .
>
> (N. p. 403, #1557)

> . . . . As they line up for recess Rob tugs at his underwear. He reaches into his jeans in the back and tugs at them. His jeans are gaping open in the back and the waist appears much larger than the rest of the pant. The pant legs are also turned up about five inches at the bottom. Perhaps they are new and not broken in yet . . .
>
> (N. p. 405-406, #1567)

In an interview with Miss Knight she felt that Rob had a great deal to share and was very quick at grasping anything new, but that he also was quite immature compared to other third graders. In addition, she states:

> "Now Rob I see -- he came in -- was new to the school this year and I knew his mother and I tried to make him comfortable with that. I wanted his transfer here to be comfortable, plus he had friends in the area anyway. The more comfortable he has gotten, the sillier he has become and the more he acted out. He was always kind of a snuggy little guy like sometimes he would come up and just say 'I need a hug.' And he would need that little loving type of thing. He likes to work on projects and like that independent thing. I can see he'll be easily bored with routine daily drill type things. He'll do it, but earlier on it was hard to get things all the way finished and back to me. I had to be in charge of that . . . ."
>
> (N. p. 500-531, #1948 TS 9)

In contrast she describes Brian as being very quiet and reserved. He would not, for example, ask if he could go ahead in his work or do other things at the beginning of the year. His own identity seemed to have been viewed only in comparison to his twin brother. Miss Knight continues:

> "He reminds me of a little old man. He's so in charge of himself and such an independent little guy and such a sense of responsibility and I probably see the most growth in him because early on I've heard people say how they (Brian and his twin) couldn't do anything without mother's direction and they walk like little robots and didn't smile or wouldn't have gotten up and asked anything. Even early on in the year, he was very interested in working independently in math. He had a voracious appetite for it. Especially working independently in math, he just was very interested. Just had a voracious appetite for it. He could just slip through it so I just let him go as fast as he wanted to."
>
> (N. p. 527, #1939 TS 9)

Classroom Integration of Special Needs Students

It appeared, that both Miss Knight and Mrs. Greenman exemplified a tolerance level far beyond what other teachers might have, but one which expressed concern and understanding of individual students. The other teachers involved with these students also expressed similar attitudes, but seemed to extend them quite differently. The interactions of the students at Barrington Elementary, for example, were not considered significantly different during the time they went to music class or gym glass. They remained a part of the total class unit and did not appear to be viewed apart from that structure. It is

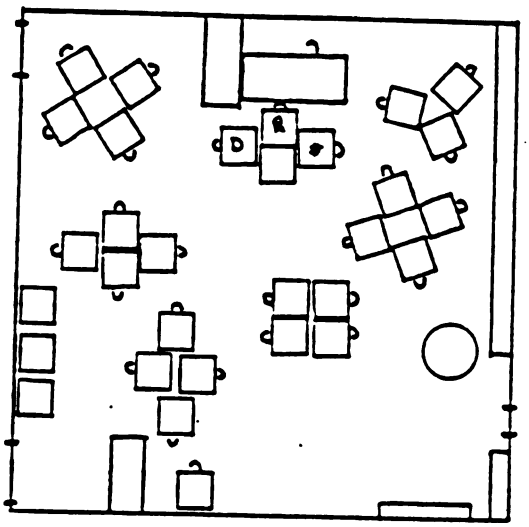
questionable if the music or gym teachers were even aware of their label of "gifted." As a district, this system practices no formal identification process to classify students as gifted and relies upon teacher recommendation to group students academically. There is no special program available for gifted students, but attempts are made to place teacher selected students in classrooms with the teachers who have been trained to use Bloom's Taxonomy of Thinking Skills. In discussions with the parents it is interesting to note that both Rob and Brian were formally identified as gifted by outside sources and were monitored by their parents as early as the pre-school years.

At Harrison Elementary, however, the reception and integration of the resource room students varied considerably. The most striking observation throughout the time in the mainstreamed classrooms was the distinct seating arrangements and the location of the students coming from the resource room. With few exceptions, they were always seated together and the seats were assigned. At first, Russ and Dori were seated in a grouping of four desks with another resource room student at the same grouping. The fourth desk remained empty. In later visits, all three students sat by each other in a row with the desks facing a brown vinyl wall. Two additional desks faced this wall, but they remained unoccupied. The rest of the students were seated at various table groupings in

the room (Figure 2). In Jason's mainstreamed classroom a similar pattern existed. The resource room students sat in a row by the outside wall of the room, but the desks were arranged so that they were behind each other and faced the front of the room. The first desk was occupied by Jason, the second by another resource room student and an empty desk separated the third of Mrs. Greenman's pupils. One additional student of hers sat, unexplainably, in the back of another desk grouping, next to an empty desk (Figure 3).

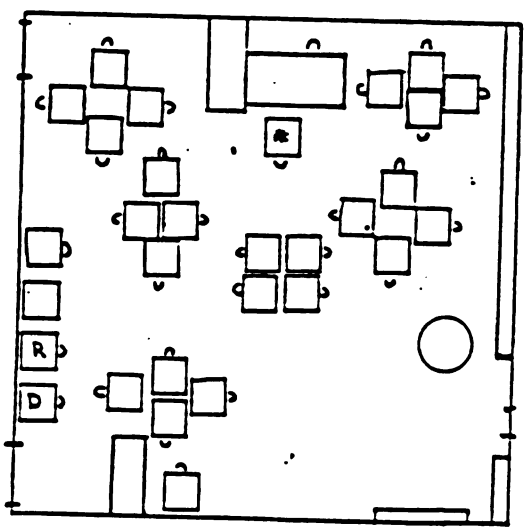
Bob was placed yet in a different classroom to be mainstreamed. He sat in the last seat of the row closest to the inside wall of the room (Figure 4). This room was arranged in definite rows and all faced the front. It was not until the year almost ended that a new resource room student joined this particular classroom and he was also seated in the last seat of a row but on the opposite side of the room from Bob. It should also be made clear that Bob, Russ, and Dori were mainstreamed for specific subjects and Jason was mainstreamed for a particular period of the day. Jason's activities, as well as that of the others that were there at the same time, varied from current events, handwriting, crafts and social studies lessons during this designated time frame.

Even more poignant than the seating arrangements were the interactions of the students in the mainstreamed



4/15

R = Russ
D = Dori
* = Other resource room student



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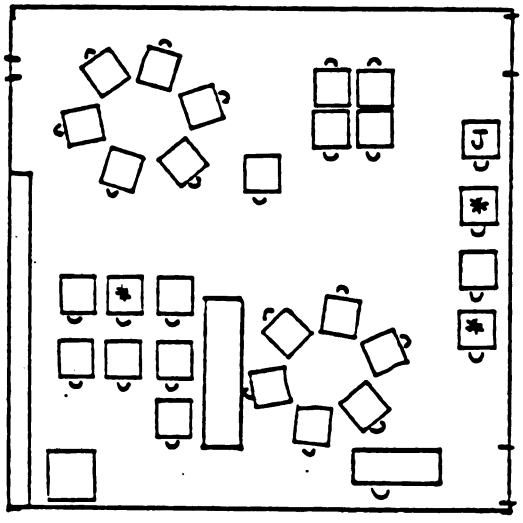
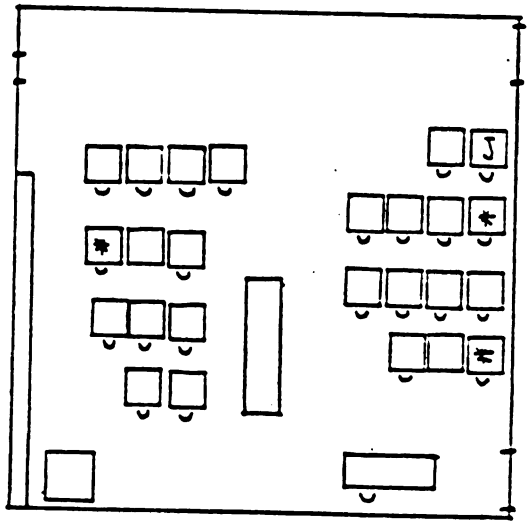
Seating Arrangements in Mrs. VanLaan's Room
Figure 2



4/9

J = Jason
* = Other resource room students



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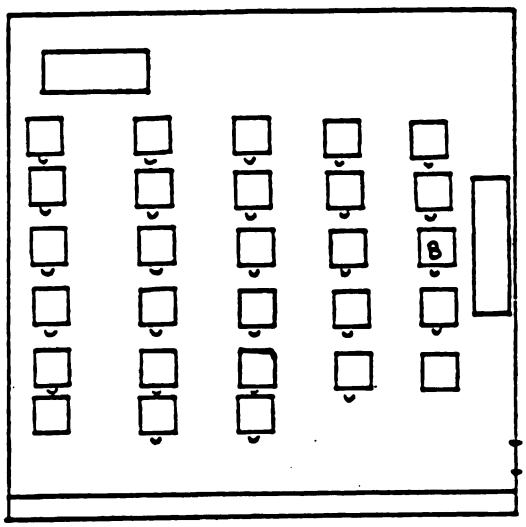
Seating Arrangements in Mrs. Laramy's Room
Figure 3



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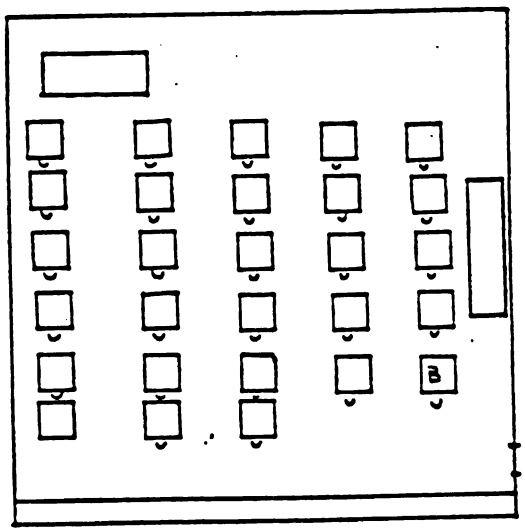

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Seating Arrangements in Miss Murray's Room
Figure 4

classrooms. The reasons and explanations for these occurrences are, undoubtedly, vast and beyond total isolation or definition. Nevertheless, the observations are significant in providing pieces of the puzzle.

Although the efforts of mainstreaming students can result in a multitude of complexities as well as successes, it appeared that the importance of such an opportunity was most accepted by Dori. Not only did it provide her with activities in art (and later in math as well), it also allowed her the social contacts that her verbal ability appeared to need.

Except for a very brief period of time, Dori was the only female student in the resource room. More importantly, however, she was among the rapidly growing minority population at Harrison School. In Mrs. Greenman's room there were two other black students, but Dori showed a decided preference to be part of a wider social circle. Even in her clothing, Dori stood out from the others in the room. She wore name brands that were currently popular and her dress was always immaculate. Mrs. Greenman explained that this particular family had the money to purchase anything. Dad owned several antique cars, had several apartments and lavished particularly his girls with a great many gifts. Mrs. Greenman thought that Dori was particularly interested in going to the math section or being put in there, because of the social issues involved.

Evident Patterns of Socializing

The observations of Dori helped frame this idea. It was quite noticeable how freely she spoke with the black female students in Mrs. VanLaan's room, and how they, in turn, approached her. Equally important was how she chose not to speak to the black male students and avoid the other students altogether. For example:

> . . . . She (Dori) has her paper on top of her math book while she's coloring. She looks up and she turns around to her right slightly and says something to another black student that is sitting diagonally away from her. Her face is rather sullen and unresponsive, almost angry. He says something back but she continues to draw. It might appear that he said something to her first . . . . Another black female student comes up to the teacher's desk and says something to Dori on the way. The teacher's desk is very close to Dori's. Dori holds up her paper and says something to her and then continues coloring. This student then goes back to her own seat. Dori goes up to a table by the teacher's desk and gets what looks like a cardboard pattern for a cracked egg shape design. She goes over to the counter and selects a piece of paper from the supplies there. On the way back to her desk, however, she is stopped by this same black student, and another black female that is sitting right across from her. They talk to her a few minutes but Dori stays only a moment and then sits down at her own desk. Now she has the chick pattern and the half egg pattern. The student that had stopped her comes over to her and talks about something. She also has two patterns in her hand and Dori says, "I traced this and this." It is unclear what else she said after that. She does, however, get the scissors out of her desk and gives them to this particular student . . . .
>
> (N. p. 187, #828-829)

The selective interaction was noticeable with each observation. Dori appeared very social and the black

female students, particularly, came to her to talk with her or to look at what she was doing. Her image seemed to be enhanced by the designer clothes and the very astute social manner she exemplified. Mrs. Greenman concurred these things were very important to Dori.

> ". . . . That her whole communication is geared towards that. Her speech, clothes. That she is very social, that she can communicate this way and that she's very knowledgeable along that line and the father has made it a point to give her the best of what he could . . . ."
>
> (N. p. 191, #842)

In addition, the interaction with predominantly black students was evidenced in a limited setting. Was it evident elsewhere as well? Mrs. Greenman felt that this was a very big issue for Dori and that there was something to it. She states:

> ". . . It seems to be that there is a coalition that is formed, or a support group that is formed among these particular black students and that Dori's quite an instigator. That has become very evident and that Dori does rely upon that interaction with them and since she's very, very verbal she can be a leader among them . . . ."
>
> (N. p. 269, #1115)

A similar pattern of selective interaction seemed to be followed by Jason. In Mrs. Greenman's room he interacted freely with all the other students. Take for example a field note entry of 4/9/87:

> . . . . Russ was working at a table in front of the room. Jason was watching the students, trying to make eye contact with them. He looks around constantly, turning his head from student to

> student. Finally Russ turned around and Jason signaled something to him. Kevin then used sign language with Jason and another student, Robby, used sign language with Jason, too . . . .
>
> (N. p. 148, #689)

And 4/22/87:

> . . . . Jason leaves the room, too, and says, "Gotta go to library." He comes back in a minute and appears to kick another student as that student leaves the room. On his way to his seat he grabs a box of crayons off of Kevin's desk and takes them to his own desk. Kevin complains to the aide . . . . The aide talks to Jason and settles the crayon dispute. Jason comes back to the kidney shaped table to work with the aide . . . .
>
> (N. p. 258, #1067)

In his mainstreamed classroom, however, Jason remained much quieter and more reticent. He limited his contacts to the resource room student right behind him or to the other black students in the room, particularly the one student that sat across the room from him by the door. At the end of a class session on 4/9, for example, Jason hurried out of this classroom and into Mrs. Greenman's room right across the hall. He put down his Weekly Reader magazine and zoomed back into Mrs. Laramy's room, touched the head of the black male student right by the door and hurried away quickly. Before this student could turn around, Jason was already across the hall, standing in the doorway waiting for a response. The black student gave him a smile but did not get up. Jason then scurried fully into Mrs. Greenman's room.

There were several other black students in Jason's mainstreamed classroom, but he seemed to prefer the contacts with this particular student by the door. For example a field note of 5/20/87 talks about the same student:

> . . . . Jason gets up and goes to the other side of the room to talk to a black male who sits close to the door . . . .
>
> (N. p. 499, #1843)

Although the proximity to other black students could have been a deterrent for Jason, he provided his own means of maintaining contacts when he wanted them. He seemed to be comfortable with limited interactions, but also knew whom to go to for directions when he needed help. Take, for instance, a day when Mrs. Laramy needed to leave early and the school principal sat in the room for a short period of time. Jason and the other resource room students were working on a particular activity that had been completed by most of Mrs. Laramy's class during the morning hours. He had finished using a container of crayons and was now ready for the next step. Several desks had been pushed together in a new seating arrangement and Jason sat next to a black female student although his desk remained sandwiched against the outside wall. This student had been working on the same activity and was now finished with the crayons, as well. The field notes continue:

> . . . . Jason is looking inside his desk. He says something to the black female by him. She grins

> and glances at the principal. They then talk some more. When the principal mentions something about the noise level, the girl looks back at him. Finally Jason and the girl get up and come to the long table where the principal is sitting. Jason is carrying a paper and a pair of scissors. The girl goes over to Mrs. Laramy's desk and gets a pair of scissors even though Jason held up his and said, "Here". He stops by the desk of another black female and says something while pointing deliberately to his paper. She says something to him and he goes back to his seat and begins to cut something out. The girl sitting by him has also returned and is cutting with the shears she obtained from Mrs. Laramy's desk . . . .
>
> (N. p. 500-501, #1851-1852)

In discussing these interactions with Mrs. Greenman it became clear that, perhaps Jason's level of security was at stake this year. It was his first year at Harrison School, having experienced no success in a variety of preceding resource rooms, and he is living with his father after a recently finalized divorce. In a taped interview of 4/16/87, Mrs. Greenman talks with the researcher about the differences that were being observed between the two classrooms:

> Researcher: . . . .(Jason) definitely is a quieter student than he is when I'm in your room. I think, that's the comfort level, too.
>
> Mrs. Greenman: Yeah, right. There's too much to risk there. There is a real difference between the two environments as far as how he could perceive himself maybe . . . .
>
> (N. p. 211, #906 TS 6)

In contrast to Dori and Jason, the patterns of

socializing of Russ and Bob were not nearly as selective but did remain confined to the students in the immediate proximity of their desks. Russ, for the most part, was very quiet and intent on his work when he was in Mrs. VanLaan's classroom. Most often, he would turn to either of the other two resource room students that were seated next to him. On occasion, however, he did interact with some of the other students closest to him in his mainstreamed classroom. For example, in the field notes of 5/19/87 he appears to be interested in establishing some communication with others and does so selectively:

> . . . . Russ is turned sideways so that he's facing the right side of his seat and he seems to be listening to the students talk right by him. He then talks to the student sitting two desks away from him. No one is sitting between them . . .
>
> (N. p. 484, #1792)

And on 4/28/87 during a small group activity with the student teacher:

> . . . . Russ lays on the floor in back of the others and counts the markers. The student teacher discusses some problems with the students. Russ watches her and then she begins to work with one student at the blackboard. The others begin to line up as if waiting for their turn, too. Russ, however, is kneeling between James (a black resource room student) and George (another black student). He is kneeling in such a way that he sways back and forth so that George can't tag James. They appear to have a little game going . . . .
>
> (N. p. 304, #1236)

Bob, as well, associated only with those immediately close to him, but his interactions appeared to convey deliberate attempts at conversation. He was not nearly as intent on doing his work. Frequently, Bob would whisper to someone close to him or maintain eye contact and smile. During music practice, for example, Bob often attempted interactions:

> . . . . And then when the students are singing again, he (Bob) looks at his neighbor and at the student in back of him and smiles each time at them . . .
>
> (N. p. 312, #1260)

> . . . . Bob smiles up at the student who is in back of him . . .
>
> (N. p. 312, #1261)

> . . . . He makes a face at a black student that is standing next to him right now because the student that had been next to him on his left side has gone to rehearse his part in front of the group. This girl, however, doesn't even look at him. He scratches his head, and leans back far enough to sit down on the back bleachers. He watches the students come back up on the risers as they finish with their parts. Bob smiles at the student that ends up behind him again . . . .
>
> (N. p. 313, #1263)

> . . . . During a solo part Bob smiles and steps on the student's foot next to him on his immediate right. They both are trying to step on each other but it is not clear how this activity started. This is the student, however, that had his hands on his hips and never smiled at Bob, even in Bob's attempts to recruit a response. Neither does he smile now. He appears to keep a straight face during the entire playful activity. Bob whispers something to the student in back of him. Bob turns to his left so that he can see him up on the riser. He shields his mouth with one hand while whispering and breaks into a smile at the end . . . .
>
> (N. p. 313, #1265)

In other class activities Bob often whispered or talked to the students in his immediate proximity. Since he sat in the last seat of a row against the wall, the closest students by him were seated directly in front of him and to the immediate left in the next row. On several occasions these two students initiated the interaction as well. It is of interest to note that both students had distinct characteristics that served as part of their identity in this classroom. Sebastian, the student directly in front of Bob, came from Poland and audibly flavored his speech with traces of an accent. When Bob was in the classroom, Sebastian often turned to him. Take for example a field note entry of 4/30/87:

> . . . . Sebastian is not sharing his book with anyone. Occasionally he turns around and looks at Bob. He has his body turned to the left in his chair so that his left shoulder is facing Bob's desk . . . .
>
> (N. p. 342, #1347)

The other student who sat immediately to Bob's left was Jeremy. During the course of the observations, Jeremy often took it upon himself to help Bob, and, at times, even did the work for him. Bob never rejected these efforts, but never openly requested them, either. An entry of 4/29/87 explains:

> . . . . Bob asks for scissors because this particular project needs to be cut in parts. The student (Jeremy) next to him in the next row says "Well, why didn't you tell us?" Bob replies, "Well, I just got here." Jeremy says, "Oh,

> Miss Murray, he needs scissors." Miss Murray responds, "I know, we have a problem with scissors." She asks some students if they are finished with theirs and finally finds one that is finished with the cutting. She brings the scissors back to Bob, and then she explains to him what he is to do. He follows the directions and begins the cutting process. Jeremy asks him, "Bob, do you need a pencil?" Bob replies, "Yeah" . . . . Jeremy then tosses him a pencil. In a few seconds, Bob tosses it back and says, "I can use my hands for the rest of it." He is curling the ends of the paper . . . .
>
> (N. p. 323, #1291-1292)

A few minutes later when Bob had been given a green pipe cleaner, he watched the demonstration to find out how to transform it into a flower stem. He held it up to his left eye as if looking through it like a telescope of some sort and then he watched Jeremy turn his pipe cleaner into the exact shape that had been demonstrated. Bob asks him, with a slight sense of wonder in his tone, how he had been able to do that. The reply was followed by immediate action:

> . . . . Jeremy asks, "Do you want me to do it for you?" He goes over immediately without waiting for a response and works with Bob's pipe cleaner to shape it similarly to his own . . . .
>
> (N. p. 323, #1294)

Bob, however, does not watch Jeremy or act particularly pleased. Instead he spends the time talking to Sabastian in front of him.

In a later conversation with Miss Murray these observations were noted, and she states:

> . . . . "Oh, yes. Jeremy will take care of anyone that let's him . . . .
>
> (N. p. 325, #1301)

She also commented that Bob liked to have others do things for him. She referred to the example of the stems as a typical incident.

The interactions exhibited by the two "gifted" students, Rob and Brian were in total contrast to each other. Even when not in their own classroom, they never needed to adjust to a different group of students, structure, or procedure that varied considerably. Their identity as a member of the group never seemed in jeopardy, although, at times, their ability stood them apart. They appeared comfortable and at ease relating to others, but exhibited very individual ways of doing it.

Rob was always noticeably more active and loud. He spoke freely with anyone in the room and never limited his contacts to just those around him. The structure of the room, however, did enhance this mobility and encourage diverse interactions. Take for example an activity on 4/24/87:

> . . . . Miss Knight asks the students if they have heard of the term "pack rat". Rob raises his hand and then he raises both. A short class discussion ensues to which Rob is very attentive although he had not been selected to respond to the inquiry. Within seconds, Miss Knight instructs the students to discuss things that they think are worth saving and to do this with their "partners". As the students gather with their different partners, who are not in the same seating groups necessarily, Rob points to the back of the room. He begins to walk toward the sink. There is a student by the

> drinking fountain and as he turns around, he goes toward Rob. They meet right by this student's desk and put their arms around each other. Rob says, "Okay, what are you going to say?" They both share this student's chair and they lean over the desk almost lying on it together while they keep their arms around each other. This is the same student who had started to sing in music when no one else did, and Rob had put his hand on his head. He is the only black student in this classroom . . . .
>
> (N. p. 296-297, #1213-1214)

Rob was often seen talking to this student, and it appeared that they were friends, more so than with all the other students that he maintained contacts with. In fact, during a particularly large class project on 5/14/87 where both Rob's and Lionel's mother were present, they were overheard discussing the need to maintain their contacts even after Rob's family moved away this summer.

Brian, on the other hand, initiated very few interactions, but did share his thoughts and ideas in small groups. He was never seen to exert himself in these groups, but chose instead to maintain a contributing role. Consider an activity of 4/17/87 for example, when the class had been assigned to work in their seating groups for an activity:

> . . . . As they begin to do this, Brian is talking with his group at his table area. They talk in whispers so as not to interrupt each other . . . .
>
> (N. p. 215, #916)

And a few seconds later:

> . . . . Brian is sitting on his knees on his chair leaning over the table on his elbows . . . I can see his lips move. His eyes are towards the

> group . . . . In this particular group there are three boys and one girl. The girl is serving as the recorder. All of them, however, are talking and their lips are seen moving as they share with each other . . .
>
> (N. p. 216, #919)

Behavioral Styles of Students

Miss Knight saw Brian and Rob as very capable students, but with definite individual differences. Rob presented himself as verbally fluent and seemed to exhibit a wealth of information during class discussions and activities. At times, however, his behavior seemed to escalate with such a force that he seemed to lose all perspective of expectations. His name often appeared on the board, indicating time owed for inexcusable behavior.

Although his behavior was quite prominent, it appeared to occur throughout a variety of activities. During a group related activity, for example, Rob looked at the others in his group and appeared to be either waiting or choosing not to contribute anymore:

> . . . . He forms a tube out of a sheet of notebook paper and balances it on his head. He places the palms of his hands together, closes his eyes and bows slightly as if emulating a religious practice of some sort. The paper tube falls from his head. He laughs with the boy next to him who had watched the activity. They both turn around and call to another student sitting across the room. They use a very loud whisper, yet deliberately muffling any escalation in their voices. When the student looks at them, Rob repeats the action. He places the tube on his head, holds his hands together in front of him, touches his chin with the tips of his fingers and bows ever so slightly. The tube again falls off. The student watching turns away, but Rob repeats the action one more time for his neighbor. The neighbor

> then tries it on his own head. The tube falls off whereupon Rob lunges for it and quickly throws it into his desk. He follows this action by rolling another paper into a tube shape. Rob looks through it with one eye, and then he places the tube in front of his mouth. His eyes circle the room as he holds the tube intact. It is difficult to hear if any sound is coming through the tube . . . .
>
> (N. p. 225, #952)

On yet another occasion, this time during a whole class activity, Rob had filled in his paper and was waiting for Miss Knight to continue to the next part. She, in turn, had provided time for the class to copy her overhead. As they contribute to the labeling of the parts of a shark's circulatory system:

> . . . . Rob seems to be able to keep up very quickly and seems aware of where everything is in the circulatory system. In fact, while the rest of the students are copying, he tips his chair backwards and rocks on the two back legs slightly. At one point he says, "A unicorn, a unicorn," and he places his pencil directly on his forehead as if it were protruding from his brow. He looks at the two students seated in his particular desk grouping and then he looks around the room to show others . . . . Rob then goes over to the kidney shaped table and briefly looks at the paper there. He gets a drink at the fountain close to this table. He returns to the kidney shaped table, thumbs through a book and then goes over to another desk. He stares briefly at it before returning to his own. Rob puts his knee on the back of the chair and sits on the seat with his left leg on the ground. He tips his chair over so it is again resting on the two back legs . . . . Miss Knight continues the lesson . . . .
>
> (N. p. 400-401, #1547-1548)

Miss Knight describes Rob as volunteering easily and being able to contribute a great deal. He can be counted

on to know the answer or grasp new concepts quickly. In addition, she says:

> Teacher: He loves synthesis, but I know his mom says that, that she's good at that too. He loves that label synthesis, too. Anything that he gets to create. That's his favorite thing to do.
> Researcher: So he's good at creating.
> Teacher: He enjoys using his hands and creating things more than the academic type paper work. He likes that freedom.
>
> (N. p. 533, #1953 TS 9)

On 5/1/87 an announcement was heard over the intercom system at Barrington School. It pertained to the school carnival and the winners of the decorated cake contest. For the most original at this grade level, Rob received first place. Of greater interest is, perhaps, the fact that Miss Knight's room obtained the second and third prize in this category as well.

Brian's behavior carried a much more subtle image and resulted in different role expectations in the classroom. Miss Knight saw him as quite responsible and a good independent worker. She had allowed him to complete the third grade math curriculum in his own time and offered him enrichment and computer work to accelerate his learning.

Brian did not volunteer much and even during sharing activities he chose to pass rather than take a turn to contribute. Miss Knight felt that he was someone whose expressive mode is not through auditory means. She continues:

> . . . . "He seems very confident, very comfortable. He doesn't seem to be, even if he gets disgusted, I'm sure he gets tired of my management system or lack of it, in order to quiet children down or whatever, where he ends up getting punished sometimes because he's quiet. He and Marissa are very quiet and they have to spend a lot of their life waiting for other people to get control . . . . One day not long ago, I called the two of them out in the hall and said, 'You guys just go on outside for recess. There's no sense in wasting your time.' He (Brian) was like a jet down the hall. He was ready to go."
>
> (N. p. 530, #1946-1947 TS 9)

Towards the end of the year, Brian was seen using his ability on the computer to work with another student. It appeared that students were working on individual reports. A field note entry of 5/22/87 explains:

> . . . . Brian kneels on his chair at the computer and he helps another student who is sitting in front of the keyboard now. Brian points to the keys and then talks to this student as if giving directions to him. Miss Knight says something about not running the printer right now because she didn't want the noise . . . .
>
> (N. p. 520, #1918)

Perhaps Miss Knight is trying to capitalize on Brian's abilities and characteristics. In any event, she appears sensitive to the individual differences that Brian and Rob present.

In looking at Dori and Russ as the "learning disabled/gifted" students it was somewhat surprising to discover that both of them were in the same mainstreamed classroom. Whether this was by accident or design was not

investigated. However, in analyzing the standards of behavior that were expected of them, it became evident that they were not viewed as "learning disabled/gifted", but looked upon, instead, as "resource room students." In fact, these students were often viewed as all one entity by the mainstreamed teachers and, occasionally, the students themselves interpreted a response given to one as being applicable to all. They were always referred to as "Mrs. Greenman's students" and terms such as, "in our room the rules are . . . " were often used.

On one day, for example, Dori and Russ left their mainstreamed math class without being noticed by the student teacher. When Mrs. VanLaan entered the room she inquired about Dori but received no response:

> . . . . The student teacher has been very busy with the other students and, apparently, has not seen Dori or Russ leave the room. I quietly ask Mrs. VanLaan if Russ and Dori are coming back into the room and she says, "I don't know what happened there." She turns to Jamie (a third mainstreamed resource room student) and asks if Russ had finished his math. Jamie nods his head, yes. Mrs. VanLaan is giving some directions to individual students and then again asks the student teacher about Russ and Dori. The student teacher glances over at their desks and says, "No, I wasn't even aware that they left." Mrs. VanLaan talks to a few more students on her way to the back of the classroom where I am sitting, and then she tells me that they're not sure of what happened and that she would go check. She leaves the classroom and disappears in the direction of Mrs. Greenman's room. When she comes back , I ask her quietly at an appropriate time, why the two left. Mrs. VanLaan explains that, apparently Jamie had asked the student teacher if they could leave when they were finished with their math. He, apparently, meant all three of them and the student teacher simply had replied, "yes" to

> Jamie. Jamie at this time, was still working on his math. Mrs. VanLaan also added that they should not do that. That they are told that they must ask permission to leave her classroom. "These are part of the rules that they must abide by" . . . .
>
> (N. p. 249, #1033-1035)

When the class activity shifted from math to a discussion of a field trip, Jamie was asked to go get Dori and Russ.

It appeared that these students were often given instructions as a group, or spoken to as a group. For example:

> . . . . Miss Laramy tells Jason, Kevin, and Ritchie (the resource room students mainstreamed into her classroom) that they will work on something that the rest of the class finished this morning, but she will allow them some time now to do that while her own class works on something else . . . .
>
> (N. p. 497, #1837)

> . . . . The students are collecting the Weekly Reader, but they do not collect them from Mrs. Greenman's students. The teacher then asks Jason, Kevin, Ritchie, and Robby to throw out any scraps that might be in their desks. That this would be a good time to do that . . . .
>
> (N. p. 156, #721)

> . . . . And the teacher continues, "Mrs. Greenman's people didn't have a chance to share last time". . . .
>
> (N. p. 156, #722)

Because their particular seating arrangements (Figures 2 and 3) kept them close together, it seemed to add to the convenience of viewing these special students as a group. Although it is not clear why they were always seated close in proximity to each other, on at least one occasion this

practice did isolate the students completely. On 5/21/87 the students had participated in a special program and missed their regular recess time. The teachers involved had decided to provide a short time for drinks and bathroom needs and then supervise their own brief recess outside. Mrs. Greenman was informed of this plan and instructed Russ to return to Mrs. VanLaan's room for now. He had been talking with her briefly. He complied and found that in Mrs. VanLaan's room the students were being excused to go to the bathroom and get drinks by table groups. The field note entry continues:

> . . . . During this time, Russ and another student are in their seats in the row against the wall. Dori is there, too. Jamie is sitting by the teacher's desk all by himself. Their group has not been called. It is not certain if they have a table group number like all the other table groups do. In a couple of minutes Dori is called out by the speech teacher, and leaves the room. All of the other students are given a turn to go to the bathroom and get drinks except for Russ, and another student who are still sitting by the wall, and Jamie who is sitting by the teacher's desk. The lights are then turned off and the student teacher begins to excuse them to line up for recess. She calls them again by table groups. Russ still remains seated. The student teacher calls the last table group and sees that there are still three students in their seats. She tells them that the last group includes Mrs. Greenman's students. Russ, Jamie, and the other student then get up, too . . . .
>
> (N. p. 515-516, #1900-1901)

In a later conversation with Mrs. Greenman this incident was shared:

Researcher: . . . . I just thought it was kind of interesting to see that this didn't seem to be intentional and yet, indeed, it was. Just by placing them where they are, that they weren't called upon and that they never did get a bathroom break, but they did line up for recess.

Teacher: Yes, that's just exactly how prejudice works, too.

(N. p. 517, #1905)

The expectations portrayed for resource room students was basically that they sit and do their work. Although this appeared to be the same for all the other students, an additional contingency was often implored when behavior of these special needs students was not acceptable. Several field note entries speak to the manner in which the students were informed that their behavior was not up to expected standards. For example:

> . . . . Mrs. VanLaan approaches Jamie from Mrs. Greenman's room. He does not appear to be working on his math. He seems to be staring into space and has his pencil up in the air. Mrs. VanLaan tells him that as long as he's not working, he might as well go back to Mrs. Greenman's classroom. He closes his book, puts it in his desk, and follows her out of the room . . . .
>
> (N. p. 185, #820)

> . . . . Mrs. VanLaan asks Russ if he drew a picture and says, "Did you get a paper?" Russ keeps his head lowered and does not appear to respond. Mrs. VanLaan then goes over to him and talks to him. The conversation ends with, "Or we'll go right back to Mrs. Greenman's room, and I will follow you there and explain what happened" . . . .
>
> (N. p. 252, #1049)

> . . . . And the student teacher says, "Jamie, you can go back to your own classroom, and you can tell them why . . . .
>
> (N. p. 305, #1242)

Another incident follows this same tone, but it is interesting to note that, in this case, Mrs. Laramy never saw the actual occurrence:

> . . . . Robby (another resource room student) came in a few seconds later and Mrs. Laramy told him that they were going to be working on their Mother's Day things. He tells her that he left his picture in the other room. He leaves to retrieve it from Mrs. Greenman's room. Before he came back in, another student calls for Mrs. Laramy's attention and says, "Mrs. Laramy, Mrs. Laramy, Jason just punched Robby in the mouth." As Jason comes in the room, Mrs. Laramy takes both Robby and Jason out of the room and then she comes back without them. The students are working on various projects and in a few seconds, I quietly whisper to her and ask if Jason and Robby were going to be coming back into the room at all. She looked up momentarily and firmly stated "No, I doubt it." Her tone and facial expression appeared to be rather matter of fact, almost as it she had taken care of it and didn't need to worry about it anymore . . . .
>
> (N. p. 373, #1454)

In recognizing the art abilities of Dori and Russ, the teachers could, perhaps, be conveying expectations related to their talents. Dori and Russ were praised for their work, and it appeared that they were acknowledged for these efforts. However, a certain amount of surprise was also expressed when their work was particularly outstanding. It was not clear whether they expected good work, but not outstanding work, whether they did not see any really

outstanding talent in spite of their verbal confirmations at times, or that perhaps, the value in these talents was seen as so much less than the importance of academic skills. The thoughts remain unanswered, but are inspired by field note entries such as:

> . . . . Mrs. VanLaan has left the room momentarily and when she comes back in again she sees the (mosaic) egg and she says, "Oh, you found it. Oh, my! I didn't get to see it because I was gone Thursday and Friday." There is surprise and amazement in her tone. She expresses admiration for what he (Russ) had done . . . . She comments about not ever seeing such a good creation in this particular project before . . . .
>
> (N. p. 261, #1078)

It should also be made clear that Mrs. VanLaan is a veteran of many years of teaching, most of them having been at Harrison Elementary.

Pressures of Outsiders

The pressures of outsiders that were exerted upon the students with these labels varied from subtle glances to overt confrontations. For the most part, the pressures were maintained by the teachers in their expectations of the students. A hierarchy of structure became quite evident during the months of observations, and several individuals became key in the orchestration of the ranking. As discussed previously, the homeroom teachers would often send the learning disabled students back into "their" classroom. Mrs. Greenman, on occasion, sent

students to the principal. It seemed, however, that the primary person exerting standards for behavior was the playground aide. She would often send students in from recess or deny them a recess period for various rule infractions. As a result, most of the resource room students had spent time standing in the hall at one point or another. It is not, however, possible in this study to determine if they spent more time there than any other members of the student body did.

What did appear, in the mainstreamed classrooms, was a more subdued version of applying pressure, and it came from the other students. Although not atypical of this age group, the actions seemed to be directed to the special students. For example, on 3/11/87, Russ was the only student seated in a four desk arrangement. He was working on math, although other students were working on other activities. Another student came over and sat to the left of him at one of the empty desks. The field note continues:

> . . . . They do not speak or even look at each other. The other student looks back and forth from the board as if copying something . . . . While Mrs. VanLaan has her head turned, Russ quickly counts with his right hand and utters some numbers out loud . . . . The other student sitting by Russ looks over at Russ' paper. Russ looks up at him and the student then snickers and grins broadly. Russ gives him a kind of disgusted look. He peers at him as if to say "Mind your own business". . . .
>
> (N. p. 90, #429-433)

In another instance the students are copying a large whale on their paper. They are going to use this for a writing activity and have been assured that they need not be artists to do this. Bob is very hesitant, and never attempts any part of the directions until the teacher demonstrates the assignment on the board. He draws his whale and then waves, but when asked to write some things on the waves, he stops. Bob puts his pencil in his mouth when another student looks over at his desk and says quite sarcastically, "Yours looks like a balloon fish," and he laughs slightly at him. (N. p. 173-174, #779)

One additional person seemed to play a significant role as far as Bob was concerned. Although limited to only one entry the reference provided new insight on the pressures that were extended to Bob. Consider the field notes taken when Bob was sitting in the hall instructed to work with another student:

> . . . . The night custodian, John, comes down the hall with his vacuum. The vacuum, however, is not on. He seems to be just moving it to a room that is towards the end of this hall. He turns to Bob and says, "Caught you again last night, didn't I?" Bob just shakes his head, but does not maintain any eye contact with him. The janitor continues, "I turned you in for running this time." Bob continues to shake his head and looks at him very quickly with no smile. The custodian disappears into a little storage room close to this classroom. Bob looks down and says, "Oh, there's ants here," and he moves away from the locker. He is now sitting towards the middle of the hall. The other student is trying to work on the first question they had been instructed to answer. The janitor comes back, and he tells Bob to move out of the middle of the hall. He puts

> his hand on Bob's head. Bob repeats, "There's ants there." The janitor puts his glasses on and looks at the spot indicated. "You know what that's from, don't you?" he asks. Bob says, "Yeah, food. I didn't put any food there. It's from this locker." The custodian talks to him about something else, something about his wife asking about Bob, and the janitor "thought he'd been pretty good except now maybe he got tired of being good . . . ."
>
> (N. p. 202, #879-880)

To help in clarifying this relationship, it was discovered that the janitor's wife had known Bob in his previous school and had periodically inquired about him. The janitor apparently knew Bob, too, and was not hesitant to express opinions about his behavior.

The pressures applied to Rob and Brian at Barrington School came in somewhat different forms. A most direct example presented itself in music class, when the music teacher asked Rob to try a solo part because his brother had such a nice voice:

> . . . . When the next song is played, Mrs. Daniels asks who would like to try a part of this as a solo. She turns to Rob and says, "Rob, I'd like to hear you sometime." Rob simply says, "Ahhh" Mrs. Daniels continues, "Your brother really has a nice voice," and Rob says, "I know. Everybody says that." Then Mrs. Daniels replies, "Oh, I'm sorry, I shouldn't say that?" Rob says "No, I didn't mean that. I'll sing." Mrs. Daniels then asks, "Which verse would you like to do?" Rob picks the second one and Mrs. Daniels tells the students that they are all going to sing the first verse, and Rob will sing the second. She plays the first one and they all sing. Then Rob starts to sing the second verse but stops to say, "They're bothering me." He motions with his hand at those around him. Mrs. Daniels says, "Okay, we'll come back to you." She asks the students to listen as she repeats the words to the song, and they repeat them after her . . . They begin the song again and she asks Rob to sing. He tries, but then stops and again says, "I can't do this

> with them here" . . . His voice sounded uncontrollably high pitched and not at all in tune with the notes. Mrs. Daniels continues on and asks everyone to sing. She says something to the effect of doing it another time . . . .
>
> (N. p. 354-355, #1383-1386)

On several occasions Rob was compared to his older brother. In fact, it was difficult to tell them apart from a distance because they were often dressed alike. They preferred to wear the same type of sweat pant, tee shirt combinations and were most often in the color red. They even wore the same type and color of shoe. On one occasion the researcher spoke to Rob and called him by his brothers' name. He immediately corrected the name and said "Rob." After hearing an apology he simply replied, "It's okay. We look alike." (N. p. 522, #1923)

Brian was often associated with his brother, too, but the association resulted from the fact that they were twins. Unlike Rob, Brian did not dress at all like his brother and his mother appeared particularly aware of allowing them to develop individually.

One of the strongest examples, however, of outside pressures was seen in the strong parent involvement of both Brian's and Rob's mothers. Although maintaining their own professional careers, both of them were actively involved in the school, in organizations for the gifted, and in the lives of their children. They were often seen assisting in school with things such as the school carnival, room

parties, class trips, and class activities. They appeared interested in all that went on and seemed to want their children to participate in everything. (N. p. 160, #734) Whether their presence was viewed as a direct pressure by Brian and Rob is an open question. Nevertheless, it appeared as a possibility.

Negotiation of The Knowledge Role

In some instances, a student might know a great deal about a special area or topic he or she is interested in, and might even have gained more information or knowledge about it than the teacher. This is a potentially threatening situation that would need to be resolved.

With neither Dori or Russ did this seem to be a situation that arose. However, the strong will or belief that was occasionally exhibited by the students when they were sure they were right, can easily fall into this negotiation pattern. Mrs. Greenman had repeatedly spoken of the strong will, or "stubborn to the bone" attitude of the students labeled as learning disabled, and she offered an example of a time when Russ appeared absolutely certain that he could predict the future. She explains:

> ". . . . Every now and then Russ used to get into the mood when I was talking to him about something, where he simply, absolutely would shake his head continuously and that there was no way of getting your message through to him. Yesterday, for example, when he told me that he could tell the future. I tried to explain that no one actually could tell the future. We can predict and we can assume and whatever, but no one can actually tell the future. He absolutely insisted that he could tell the future, that his dad was

> going to look for tires today. I tried to explain to him again that, yes, he may plan to look for tires but that there are always things that could happen to interrupt that plan or time or whatever, but Russ insisted, no, he can tell. That that's what his dad was going to do. So today when he came to school the first thing he told me was, 'See, I told you I could tell the future. My dad went to look for tires.'"
>
> (N. p. 371, #1446-1447)

Mrs. Greenman was simply saying that there was no way of really changing his mind once he had his mind set on one particular thing. She did, however add:

> ". . . . Well, that was part of it and that was in there, that was part of it, but that was not--it was a deeper understanding of predicting the future, of understanding the terminology. He was not being stubborn at that point. I really felt like there was just a basic break down in word meaning maybe."
>
> (N. p. 472, #1764 TS 8)

The conversation continued and showed how sensitive Mrs. Greenman appeared to be to this kind of student:

Teacher:	And if he has come to the conclusion. If he has thought it through, if he has decided that he's going to do such and so - and at that point we dropped it. But I could imagine that kind of a child being destroyed. If you were going to be determined that he was going to see it your way.
Researcher:	Well, a power lock could ensue with that and he doesn't really mean it that way, but you could interpret it as such.
Teacher:	You certainly could, as totally defiant.
Researcher:	That's right. This stubborn kid, I'm going to show him.
Teacher:	Yeah . . . .

(N. p. 473, #1766 TS 8)

In this respect, Mrs. Greenman and Miss Knight had a

great deal in common. They were both teachers who were respected by their peers as well as by their immediate supervisors. They both made a point to attend conferences and workshops about things that particularly were of interest to them, or might assist them with their students. They both had not stopped learning themselves. In fact, Miss Knight commented about the idea that "the more she learns, the dumber she gets." (N. p. 238, #997). Most of all, they both felt that there are many ways to interpret situations and that the need is there to explore those ways.

Miss Knight gave no indication of power struggles with either Rob or Brian. None were evident in the months of on-going research, but her manner of dealing with the students became key, as it did with Mrs. Greenman.

Miss Knight appeared "at home" in the classroom with her students. In her every day dealings with them she was able to answer questions, make comments, direct activities and, in general, conduct her classroom in a way that appeared to work for her. She smiled a lot, talked with the students, laughed with them, gave positive comments on their work, and was observed receiving regular and frequent hugs from her students. By her own admission she was a teacher who enjoyed the "feisties", the students who were alert, active, and bright. (Int. #B 350 [85]) She thrived on this kind of student.

A student comment about Miss Knight's top reading group provides the clues as to how the students are viewed and how they see this room.

> "In (Miss Knight's room) it makes it a little more challenging and a little more fun than the regular third grade classes cause we get to show how smart we are and in other third grade classes you're kind of scared to show how smart you are. . . ."
>
> (St. In. #2045 [85])

Inventory Selection

Today, some educators have intentionally departed from the traditional discussion of classroom materials and pupil-teacher ratios and are raising critical questions about the ways in which students learn. These efforts and related research focus on student learning skills and "learning styles." Until recently, however, information and research on the ways that students learn have seldom been a part of proposals to individualize education.

Publications such as NASSP'S Student Learning Styles: Diagnosing and Prescribing Programs point to new directions that school systems may profitably examine as they review their effectiveness. The key to effective schooling is to understand the range of student learning styles and to design instruction and materials that respond directly to individual learning needs (p. 43).

Selected for its consistency in discriminating between extreme populations and its ease of administration, the

Learning Style Inventory (LSI) by Dunn, Dunn, and Price was used. Developed through content and factor analysis, the LSI uses dichotomous items and can be completed in approximately 30 to 40 minutes. It can be administered orally or silently. Interpretation of the LSI is based upon identifying extreme preferences; that is, those elements in which the standard scores are between 20-40 (Reject areas) or 60-80 (Preference areas). If scores are in the middle range (41-59) of most elements, there is no strong preference for the element and accommodations do not have to be made in terms of the learning environment. Learning alone, and morning to evening, are two elements on a continuum. In these cases, scores between 20 and 39 indicate preferences for learning alone or in the evening; scores between 60 and 80 suggest peer-oriented morning learners.

Brian, Rob, Dori and Russ each selected to read the items on the inventory by themselves. Continual assistance, however, was provided for Dori and Russ in guiding them through the instrument. With Jason and Bob the inventory was read to them. Brian and Rob were given the inventory at the same time. The others were administered by individually conducted sessions. Each student, however, was greatly relieved that this was not a "test" and that there were no correct or incorrect responses to be found. Their individual preferences were

the only things that were important here.

At the completion and scoring of the Learning Style Inventory (LSI) it was remarkable how different they all were from each other. Close scrutiny, however, provided some interesting comparisons and similarities of individuals.

Learning Styles of Rob and Brian.

Recent national focus on the gifted/talented has led to numerous investigations concerning how such students learn. These investigations evidenced consistent patterns of independence, self (internal) motivation, persistence, strong perceptual senses, and the need for options among a) high I.Q., b) musically, and c) artistically gifted students. They also verified that the gifted strongly preferred independent studies and projects to lectures or discussions.

According to Dunn (1983), secondary traits also show that gifted students often prefer a formal rather than an informal design, need neither intake nor mobility, and have several high energy times of day/night. One of the major characteristics of the gifted is independence, or nonconformity, which is measured on the LSI by responsibility. Low responsibility is a measure of nonconformity/independence. Many gifted students score high on responsibility/conformity, but more score low on that item. The gifted appear to "see" things differently

and need "space" so they can bring their own uniqueness into what they are doing.

Although Rob and Brian did not match all of these characteristics, both showed a preference for learning alone, and both strongly preferred independent studies and projects to lectures or discussions. Miss Knight herself recognized this preference in class, and she states:

> ". . . . He (Rob) likes to work on projects, and, like that independent thing. I can see he'll be easily bored with routine daily drill type things . . . ."
>
> (N. p. 530, #1948 TS 9)

And

> ". . . He (Rob) does neat beautiful work. Takes quite a bit of pride in his work. And he loves projects. He's quite a project child at home, too . . . ."
>
> (N. p. 531, # 1950 TS 9)

In discussing Brian, Miss Knight conveys how very independent he is and what a sense of responsibility he has. She continues:

> ". . . . Even early on in the year, he was very interested in working independently in math. He had a voracious appetite for it. Especially working independently in math, he just was very interested . . . ."
>
> (N. p. 527, #1939 TS 9)

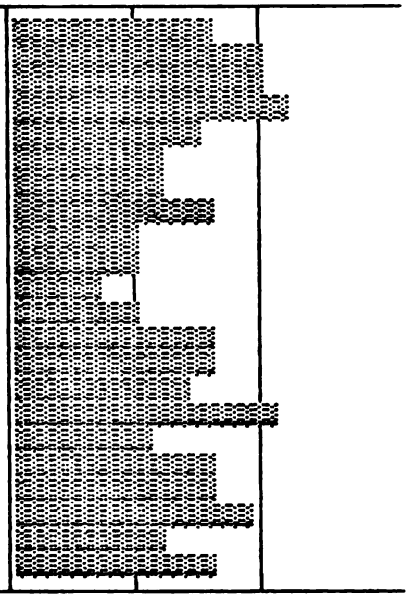
Several other areas appeared to be important to Brian, as well. He expressed strong preferences for being persistent, responsible, and needing little intake or mobility. These items correlate with the general findings

of the preferences verified by other gifted students. In addition, however, Brian also preferred to have sound present while he was working, and expressed a strong need for low light.

The Learning Style Inventory results for Rob are illustrated in Figure 5. Preference for a formal design indicates that he generally studies at a desk and chair and probably associates learning with a formal environment. He may think better on a wooden chair and desk, as in a library, classroom or kitchen. Bob would also be inclined to turn on all the lights because he likes light. It does not need to be extremely bright, but he likes more light than less. He would not do well in an unlit corner of the room. He also has a strong preference for intake and needs frequent opportunities for nutritious foods, drinks, and snacks. In the area of needing mobility, Rob showed a consistent pattern of moving and needs to be provided with frequent breaks, assignments that require movement to different locations, and schedules that permit mobility in the learning environment. Confined and required to remain immobile will result in little or no learning for him. A low score on authority figures present indicates a need for less authority oriented tasks and learning that is more self directed or geared toward personal interest. Learning in several ways is also not comfortable for Rob, indicating that he does not enjoy a great deal of variety but much

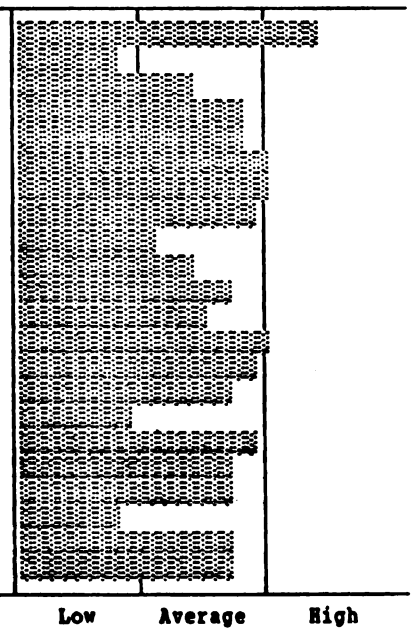
LEARNING STYLE INVENTORY OF ROB

Raw Score	Standard Score		Element
8	51	1.	Noise Level
11	60	2.	Light
14	59	3.	Temperature
11	64	4.	Design
20	49	5.	Motivation
9	42	6.	Persistence
6	43	7.	Responsibility
10	52	8.	Structure
9	41	9.	Alone-peer oriented
6	40	10.	Authority
4	34	11.	Varied
7	41	12.	Auditory
7	51	13.	Visual
13	51	14.	Tactile
15	44	15.	Kinesthetic
15	63	16.	Intake
7	41	17.	Evening-morning
7	51	18.	Late morning
11	52	19.	Afternoon
12	59	20.	Mobility
10	40	21.	Adult motivated
14	52	22.	Teacher motivated



LEARNING STYLE INVENTORY OF BRIAN

Raw Score	Standard Score		Element
13	68	1.	Noise Level
4	35	2.	Light
11	49	3.	Temperature
9	57	4.	Design
24	58	5.	Motivation
14	61	6.	Persistence
12	63	7.	Responsibility
12	59	8.	Structure
10	42	9.	Alone-peer oriented
8	47	10.	Authority
10	54	11.	Varied
9	50	12.	Auditory
9	61	13.	Visual
15	58	14.	Tactile
19	55	15.	Kinesthetic
6	40	16.	Intake
14	58	17.	Evening-morning
8	55	18.	Late morning
12	55	19.	Afternoon
4	36	20.	Mobility
12	54	21.	Adult motivated
15	55	22.	Teacher motivated



Rob's and Brian's Learning Style Inventory
Figure 5

prefers to learn in a basic pattern, probably by himself. Rob's optimal time preference is early evening and he should be permitted to schedule difficult assignments at that time. The low score on parent figure motivated corresponds to his need to work by himself. He should not be required to work with his parents. For Rob, intrinsic motivation for outcomes should be used rather than how it will make others feel.

Rob, preferred a bright light, required intake, needed mobility, and had a low preference for learning in several ways, having an authority figure present, and being parent motivated. One of his preferences, however, did correspond to the studies of gifted students in that he showed a decided preference for a formal design.

Figure 5 summarized the Learning Style Inventory results of Brian. There are seven elements on the LSI that discriminate significantly in terms of his learning style preferences. He shows a decided need for low light, indicating a preference for placement under indirect or subdued light away from windows. His low scores in the areas of intake and mobility indicate that no special arrangements need to be made for him in these areas. His strong preference for sound while learning suggests that background music may enhance the learning process. Brian is also inclined to be persistent. Persistence is highly correlated with a long attention span and the ability to

sustain interest and involvement over a period of time. He thrives on projects that demand persistence, particularly tasks which require self-learning with a high degree of independence. In the area of responsibility, Brian shows a strong willingness to follow teachers' directions and to conform to expectations and standards.

Brian's perceptual strengths lean toward the visual approaches such as those that require reading and seeing. Programmed learning activities can be recommended, as well, since Brian indicates a slight preference for structure. Written assignments and evaluations are also usable, but knowledge should be reinforced through tactile, kinesthetic, and then auditory resources. His time of day preference is late morning although he can tolerate afternoon work if he has an interest in it.

In analyzing and comparing it is, however, important to recognize that assessments of individual students, or even small groups, need to extend beyond group characteristics. Within each group there are broad differences as well as similarities in terms of learning style preferences.

Learning Styles of Bob and Jason

The dilemma of the learning disabled student has also been recently investigated in various studies. Again, no study has been all inclusive, nor can the investigations be applicable to all such students. They do, however, serve as a beginning in analyzing the learning styles of learning

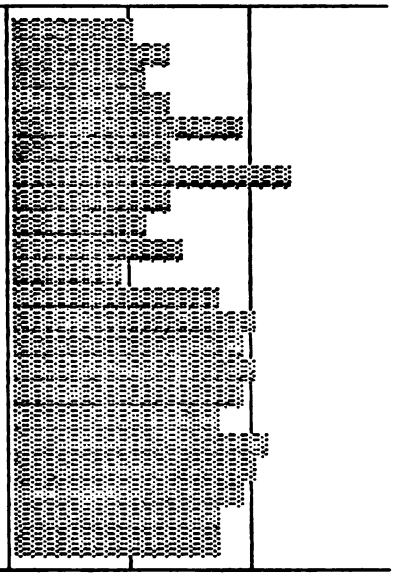
disabled students.

Several Learning Style Inventory variables seem to be emerging as significantly discriminating between learning disabled students and non-learning disabled students. Among the findings are trends that describe these students as less persistent, preferring to learn with adults or with peers. A study by Price, Dunn, & Sanders (1981) also indicated that students with significantly lower achievement levels were adult motivated rather than self-motivated, functioned best in the late morning, preferred learning through their tactile and kinesthetic senses, and preferred an informal environment when studying or learning.

Bob's Learning Style Inventory (Figure 6) delineates six elements that seem particularly significant for him. In the area of responsibility, he shows a desire to conform and follow the directions of the teacher. He would do well with short term assignments, and alternatives to regular work. Bob has a strength in the visual and kinesthetic areas implying that the use of pictures, filmstrips, films, graphs, transparencies, computer monitors, diagrams, drawings, and other resources that require seeing would be of help to him. He also needs opportunities for real and active experiences in planning and carrying out objectives. His time of day preference is late morning and afternoon. In the area of learning in several ways, Bob

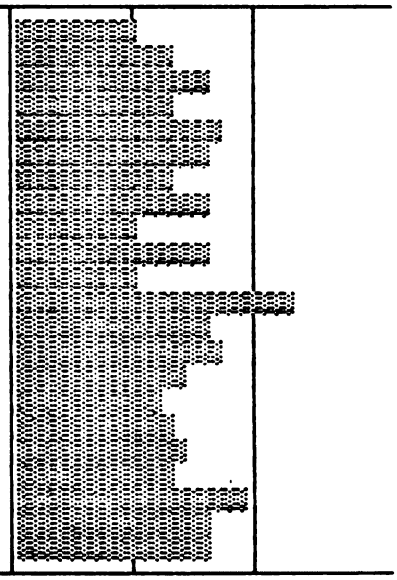
LEARNING STYLE INVENTORY OF BOB

Raw Score	Standard Score		Element
5	41	1.	Noise Level
7	46	2.	Light
9	43	3.	Temperature
6	45	4.	Design
24	58	5.	Motivation
10	46	6.	Persistence
12	63	7.	Responsibility
8	45	8.	Structure
10	42	9.	Alone-peer oriented
8	47	10.	Authority
5	37	11.	Varied
10	55	12.	Auditory
9	61	13.	Visual
15	58	14.	Tactile
21	61	15.	Kinesthetic
13	58	16.	Intake
13	55	17.	Evening-morning
10	63	18.	Late morning
14	61	19.	Afternoon
12	59	20.	Mobility
12	54	21.	Adult motivated
15	55	22.	Teacher motivated



LEARNING STYLE INVENTORY OF JASON

Raw Score	Standard Score		Element
5	41	1.	Noise Level
7	46	2.	Light
12	52	3.	Temperature
6	45	4.	Design
23	55	5.	Motivation
12	53	6.	Persistence
7	46	7.	Responsibility
10	52	8.	Structure
9	41	9.	Alone-peer oriented
10	53	10.	Authority
6	41	11.	Varied
12	64	12.	Auditory
8	56	13.	Visual
15	58	14.	Tactile
17	50	15.	Kinesthetic
7	43	16.	Intake
10	48	17.	Evening-morning
7	51	18.	Late morning
10	49	19.	Afternoon
12	59	20.	Mobility
12	54	21.	Adult motivated
15	55	22.	Teacher motivated



Bob's and Jason's Learning Style Inventory
Figure 6

indicates that this is not his preference. His inventory indicates that he has a difficult time concentrating with others present and prefers to work alone.

The Preference Summary of Jason's inventory (Figure 6) was quite unique in that it showed only one element that appeared in the significant category. As his perceptual preference he selected the auditory modalities, meaning that he would learn effectively through the use of tapes, videotapes, lectures, discussions, records, radio, precise oral directions or explanations when given assignments, setting tasks, reviewing progress, or for any performance requiring understanding, evaluation, and/or retention. It should, however, be reinforced through tactile, visual and kinesthetic resources. The discussion of this particular inventory will be expanded in a later section.

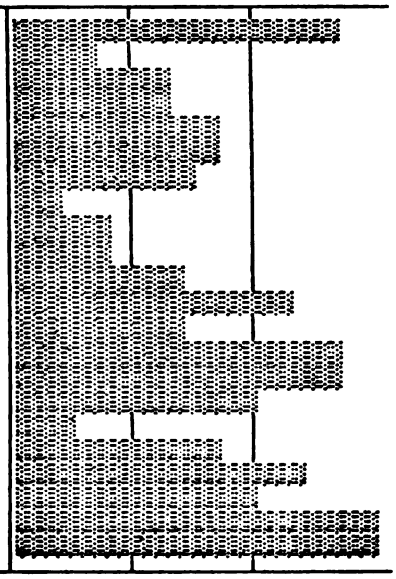
It is also of interest to note how similar the standard scores were for Bob and Jason. On several items, seven to be exact, their scores were identical, although the scores were within the non significant, or "it depends" middle range of numbers.

Learning Styles of Russ and Dori

Labeled as "learning disabled/gifted" Russ and Dori fit into neither category by itself. Their Learning Style Inventories, as well, proved to be quite different from all the others. Five items received an identical standard score and four of those items discriminated significantly in terms of their learning style preferences (Figure 7).

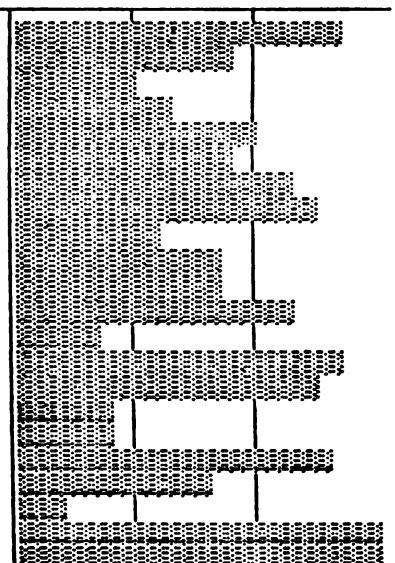
LEARNING STYLE INVENTORY OF RUSS

Raw Score	Standard Score		Element
15	75	1.	Noise Level
4	34	2.	Light
11	48	3.	Temperature
6	47	4.	Design
22	54	5.	Motivation
12	53	6.	Persistence
8	49	7.	Responsibility
4	29	8.	Structure
9	38	9.	Alone-peer oriented
7	38	10.	Authority
9	47	11.	Varied
12	64	12.	Auditory
7	47	13.	Visual
15	73	14.	Tactile
20	71	15.	Kinesthetic
14	61	16.	Intake
6	32	17.	Evening-morning
8	54	18.	Late morning
15	67	19.	Afternoon
12	60	20.	Mobility
12	80	21.	Adult motivated
15	80	22.	Teacher motivated



LEARNING STYLE INVENTORY OF DORI

Raw Score	Standard Score		Element
14	72	1.	Noise Level
10	59	2.	Light
9	40	3.	Temperature
6	47	4.	Design
24	60	5.	Motivation
13	58	6.	Persistence
12	64	7.	Responsibility
12	69	8.	Structure
11	42	9.	Alone-peer oriented
10	51	10.	Authority
11	56	11.	Varied
12	64	12.	Auditory
5	36	13.	Visual
15	73	14.	Tactile
19	68	15.	Kinesthetic
7	39	16.	Intake
8	39	17.	Evening-morning
12	74	18.	Late morning
11	51	19.	Afternoon
4	28	20.	Mobility
12	80	21.	Adult motivated
15	80	22.	Teacher motivated



Russ' and Dori's Learning Style Inventory
Figure 7

Both Russ and Dori were perceptually strong, indicating that a broad range of teaching techniques can be utilized, including auditory approaches such as lecture discussion, tactile approaches such as manipulatives and three dimensional materials and written or graphic records, and kinesthetic approaches such as being actively involved and experiencing things first hand. They both also scored the highest preference possible in the areas of parent and teacher motivated, indicating a very strong need to have a work area near the teacher, to have continual communications with the home (notes, tapes, student's work) to receive praise in front of parents, and to be involved with other adults when working.

In addition, Russ showed a strong preference for having sound present, needing intake, needing mobility and finding the afternoon and evening to be primal working times for him. He also indicated that he preferred low light when working and desires a structure in which he is able to define the parameters of the task himself. Russ prefers, as well, to work alone and work with a colleague-type adult, not one that is particularly in charge or has authority.

Dori's remaining Preference Summary included strong preferences for sound present, strength in being motivated, particularly adult and parent motivated, responsible, or

conforming and needing a substantial amount of structure provided in her work. She seems to function best in late morning and early evening. Additionally, Dori prefers a slightly cool temperature, implying a need for adequate ventilation or air conditioning. The area of visual modality was quite low, as was the need for mobility and requiring intake.

Preference Summaries Interpreted

Prior to the administration of the Learning Style Inventory, the students had been informed that, more than likely, they would not be surprised at what the Preference Summary would show. The preparation continued with examples of inventory items given and discussed. Most of the students identified readily with the examples and could express their preferences without hesitation. Of particular interest were some comments made by Rob. He seemed to have a quick grasp of the concepts on the Learning Style Inventory and made it immediately applicable to himself. In seeking out some of the differences that might be evident in their classroom, Rob and Brian both volunteered a few things. Rob then stated that he needed to move around. That if he sat in a chair for a long period of time, he "felt real restless and he just had to move around." (N. p.99, #469) During the course of filling in the inventory, Rob and Brian both exhibited very distinct styles and approaches to the task. Brian sat

quietly, hardly moving his body, except for his pencil hand and the quiet moving of his jaw as he chewed gum. He hardly shifted his body nor raised his head during the time he was concentrating. Rob, however, seemed to move constantly, looking around the room, getting up to get a drink, using an eraser often, resting his head on the table and shifting back and forth in his chair. His earlier statement seemed to confirm his own understanding of himself in this regard.

In analyzing the Learning Style Inventory Preference Summary several weeks later, Rob readily acknowledged the items that appeared important to him and freely provided additional confirming examples of the preferences discussed. In addition, during a later session with his mother, she, too, commented on how his behaviors at home were representative of the preferences indicated on the summary. She felt particularly pleased that Rob was not parent figure motivated and interpreted that to imply that she had accomplished her task as a parent in that he did not need to rely on her for every direction and need.

Brian's mother, as well, was quite interested in seeing his Preference Summary and had often inquired about this study. In a field note entry she explains her interest:

> . . . . She said, yes, she thought it (watching the students) was interesting, too, since Brian is a twin. She watches both of them and they are very different, and that she is always amazed at how each of them act differently instead of assuming that they might act the same because they are twins . . . .
>
> (N. p. 160, #735)

After hearing the interpretation of Brian's Learning Style Inventory Preference Summary, she commented on how well it seemed to describe him, and was pleased that she was given a copy to take with her. She did not expand greatly on providing further examples of his activities at home, like Rob's mother, but listened intently and talked only briefly. The similarities of mother and child, although subtle, seemed to be noticeable, particularly in the manner in which each approached a task. This was further evidenced one day, when, by chance, the opportunity presented itself to view both mothers with their children in a school related activity.

On 5/14/87 in Mrs. Knight's class, the students were preparing to dissect sharks as a culmination to a year's study of oceans and sea life. Several parents had volunteered to assist, at the general request of Miss Knight. Rob's mother as well as Brian's mother had been among those to offer their help. Each adult present was assigned to assist one of the groups of students. Brian's group was working with his mother and Rob's group was working with his. The students had been duly instructed to follow the procedures and to treat this learning process as an adventure as well as a scientific exploration. The parents, however, did not hear this particular admonition since it had been given to the students in their classroom and now they were all working in the gym. After Miss

Knight demonstrated the dissecting process, the students returned to their groups to begin dissecting their own sharks. The field note entries of that event describe the approaches used by Brian's as well as Rob's group:

> . . . . The term, "Oh, how scientific" can be heard since the students have been instructed that they are not allowed to say, "Oh, gross" or use other similar expressions in this process. The students are following a shark dissecting check list so that each step of the way is recorded and monitored. Brian is checking off items on his group list while the others are doing the actual dissecting at this time. In viewing Rob's group it is noticeable that he is bouncing up and down as he watches the others begin the dissecting. He points to something on the newspaper that is covering the table and says, "Look, mom" and then mentions something about it. There are four students in his group . . . . Rob watches the cutting of the shark and he pounds with open hands on the table. As the shark is opened Rob says, "Oh, the liver, the gall bladder" and points to the different parts. His mother tells him to get out their diagrams. Rob watches as one student cuts out the liver. Rob's head is very close to the shark while this is going on. He does not seem to be aware of the very strong smell of formaldehyde which is permeating the entire gym . . . . Rob hangs on to one piece of the shark as it is cut and he says, "You should feel this. It's soft on one side and like sandpaper on the other." He's holding the shark open while he's saying this and while the different parts are being labeled and identified on a chart on the floor . . . . In Brian's group, Brian points to a part and says, "That's the cordal system vein" and his mother asks, "The what?" He repeats it as someone else is checking off the digestive system parts on the sheet. Rob's group had not been checking anything off, but when I returned to his group they were now trying to backtrack and check things off. Lionel and Rob are discussing which parts to check off and the rest of the group joins in . . . .
>
> (N. p. 425-427, #1623-1628)

Later, a research memo puts the thoughts into words:

> . . . . In Brian's group the students seem to be more subdued and proceeding methodically as instructed. Brian's mother appears very systematic in checking the things off, following the procedures and making sure the items are analyzed completely before they move on to the next step. In Rob's group, however, Rob's mother exhibits a personal interest and exuberance for the project and appears to lose track of maintaining the check sheet and proceeding in the order planned. Their particular floor exhibit however, appears to have many items already labeled and placed for view. The other groups are progressing much slower in the same process. There seems to be just a slight connection between the type of behavior that was exhibited by the mothers and the type of behavior that is exhibited by Brian and Rob . . . .
>
> (N. p. 430, #1640)

A discussion with Miss Knight several days later added more detail, as well:

> . . . . It had been a great opportunity to see both mothers working with their children and that a definite similarity of pattern had been evident. Brian's mother encouraged the students to go step by step to follow the outline very accurately, and to explain each step in detail. Miss Knight added a comment, "Yeah, she's a scientist. So that would be the process she would use." And she laughed at the accuracy at which that particular group followed the whole process whereas "in Rob's group with Rob's mother, they seemed to just be interested in what was coming up next as quickly as absolutely possible and totally ignored the check list at first-then all of the sudden did get it out and tried to get caught up but at the same time keeping the momentum going of the action. Just the finding and just the sharing. It was as if none of them could actually wait or analyze, but they just wanted to keep going . . . . "
>
> (N. p. 460, #1725)

In classroom work, Brian very methodically followed instructions and completed any assignment given him. Rob,

on the other hand, got excited easily, liked to become immersed in a task, but often became sidetracked and failed to reach fruition. Miss Knight describes Brian's persistency and his tolerance for concentration in this manner:

> ". . . . You've noticed, too, that it doesn't seem to bother him one way or another if someone is standing on his head next to him and he's intent on doing something, he goes for it, and he finishes it and tries to get right through it."
>
> (N. p. 529, #1944 TS 9)

She additionally comments about Rob's enjoyment of getting involved rather than listening or hearing about something:

> Teacher: . . . . "Because when they've had choices like to do pieces of literature and different activities, he always does something like a play or something to act out. It would be quite detailed. Like an incident that we did of Ira Sleeps Over. It ended up not having much to do with what the original direction was. He brought in tons of stuffed animals. He loves stuffed animals. He had this light in his house. It was all elaborate. It didn't go together real well. He didn't manage to pull it altogether. He had a lot of fun trying to get it all organized. He brought tons of things to school. He had a huge stack back there, but it ended up not being a very polished product. I had higher expectations for him then some of the quality of work that I've seen him do.
>
> Researcher: It sounds like he maybe had too many ideas and couldn't pull them together or--
>
> Teacher: It was more of a thing you expected him to play at home and act it out fiddling around like some evening at home . . . .
>
> (N. p. 533-534, #1955-1956 TS 9)

In further analysis of all the LSI Preference Summaries, it is important to note the consistency score provided on each profile. A consistency score is calculated for individuals based on their responses to questions that are repeated throughout the Inventory. The higher the consistency score, the greater the confidence that can be placed in interpreting the student's responses. For the Inventory results to be meaningful, the student should have a consistency score of at least 70 percent, indicating that responses to 70 percent of the item pairs were identical. If the consistency score falls below 70 percent it is indicative that the results are not meaningful (Dunn, Dunn, and Price, 1985).

Both Rob and Brian obtained consistency scores of 100 percent. Dori obtained 100 percent as well, and Russ received a score of 88 percent. Jason and Bob, however, both received 75 percent. What is of particular interest to regard, however, is the manner exhibited by Jason and Bob as they recorded their responses. Jason especially was very willing to participate, but whether or not he fully understood, was distracted, or simply did not know himself remains in question. Consider the account of this endeavor in the field notes of 4/4/87 when the instrument was first administered:

> . . . . The library appeared to have no students in it at the time so we inquired to see if we might be able to just sit in the library for a

few minutes to fill in the inventory. The librarian thought it would be a good time now so we found a table, sat down, and began to work on it. After we had one question read, a class began to come into the room and the librarian told us she had forgotten all about this class. Jason and I decided we'd better find a different room. We began walking down the hall again going back towards Mrs. Greenman's classroom. Jason suggested we might try the special services room which is often used by the speech teacher. We did, however, notice that there was someone in the room. At that time the school secretary came walking down the hall and saw us looking for a room. She suggested we follow her to the computer room that might be available. We followed her almost the full length of the hall and found the computer room to be empty. We sat at the table in the room and began again to work on the Learning Style Inventory. I explained again to Jason how he was to answer the particular questions and that there was indeed no right or wrong answer. It was all a matter of what his likes and dislikes were according to what was asked of him. He nodded in agreement as if to say that he understood. We used a cover paper to help us keep track of each of the questions so that his eyes could follow the lines easier. I read the questions to Jason as they appeared. The first time we began it, he had some difficulty with reading them. He did, on occasion, ask for explanations of particular terms or statements. After a few minutes of working, however, another student came into the room and sat down at the far end of the table. I asked her if she was going to work in the room and she indicated no, but that there were some other students coming, too. Jason and I decided to wait until they came to see if we might need to find yet a different room. The teacher appeared shortly with a few other students, saw that we were working in the room and decided that she would find a different place to work. She stated that "This had been one of those days." We continued to work on the inventory. Another teacher came by, also looking for a room to work with a particular student. She advised us that she would be able to find a different room seeing that we were working in this one. Jason and I then continued uninterrupted until we finished the questionnaire . . . .

(N. p. 166-168, #754-758)

During the remainder of the session Jason erased frequently, although a deliberate attempt was made not to view his responses. After reading a statement, for example, the researcher often looked out the window deliberately in order to attempt to make him comfortable. When finished, however, his responses were noticeably marked under the "uncertain" category of the inventory. Mrs. Greenman later added that perhaps he really was not able to listen to himself.

With Bob, the situation was somewhat different in that we found a room on the first try and were not interrupted during the time there. He did, however, offer a nervous smile and when told that this was not a test he said rather flippantly, "Aw shucks, I though it was a test." (N. p. 179, #798). Although the questions were read to him, he appeared somewhat restless. At times he shifted around in his chair but was not evidently uncomfortable. Some of the terms needed to be explained to Bob, but we finished rather quickly and proceeded back to the classroom. He stopped to get a drink of water and then talked about one of the items on the inventory. It was the statement that asked whether or not he could sit still for long periods of time and each time it appeared he had answered "No, I can't." It was curious to find out, however, that his Preference Summary did, indeed, indicate a need for mobility, but that it also depended on the

particular task he might be working on. He did not need it as an absolute ingredient to finish work.

Responses to the interpretation of the Preference Summaries varied only slightly from student to student. They were generally pleased to hear about themselves and expressed an unexpected interest in the print-out itself. Perhaps the most poignant response came from Russ and his parents. His mother especially had been particularly interested about this and was most anxious to find out what the instrument showed. She had, apparently, been very involved in understanding and helping Russ in any way she could, and was always looking for additional clues, methods, and advice. His father, on the other hand, appeared very quiet and did not share his thoughts until the end of the session. At that time he stated that some of the things sounded like him and that he had had a great deal of difficulty learning in school. Unlike Russ, he continued, he didn't have the help that's available now. Russ appeared pleased with the entire evening session. When asked whether he minded the presence of the researcher in his classrooms he replied "No-o-o, I kinda like it!" (N. p. 539, #1977)

The following day in school, Russ related the visit to Mrs. Greenman with much enthusiasm and delight. As an interesting side line, Mrs. Greenman related the following event:

> ". . . . We turned some of the lights off and he (Russ) is sitting in the center of the room which would be directly under the center row of fluorescent lights. The center row of lights was turned off and at one point one of the students tried to turn on the center row, Russ looked up and said, 'No, don't do that, I'm so much more comfortable without the center row on.' It was just kind of cute, indicating that he felt very secure in knowing that he was more comfortable without the direct light above him and that now he was beginning to verbalize that fact". . . .
>
> (N. p. 542, #1991)

Upon seeing his inventory, Mrs. Greenman also stated that yes, she could see exactly the kinds of things that he was showing in the classroom as far as the way he chose to sit or work or whatever. It was very clear that some of these things were very important to him. She also wondered if she might put this inventory in the files so that when he left this particular school the information would go with him.

The reaction of Dori, Jason, and Bob to the interpretation of the LSI could not be recorded in this study. Given the conditions of administering the instrument and their precariously low consistency score it was decided that Bob and Jason should take it at another time again, but it would be best not to meet with the parents at this time. Part way through this study, Dori's parents were in conflict about her participation. When this became clear, no further contacts were initiated with her, and her LSI was left with Mrs. Greenman.

Awareness of Learning Style Characteristics

Throughout the periods of observation there were always patterns of behavior that surfaced, but they seemed to take on additional significance when the LSI confirmed them. For example, Jason would often work outside the room in the hall. This was not a form of punishment, but a choice for him. He needed it quiet and not distracting and found, for the most part, that he could get his work completed there. On one occasion, however, he couldn't concentrate there either. He moved in and out of the door constantly, sharpened his pencil several times, asked the aide questions, and could not contain himself in one spot. Upon inquiry, Mrs. Greenman acknowledged that he was having a difficult time that day because during a conflict they had in the morning Jason had, apparently, lost bladder control. (N. p. 109, #518)

In the research notes about Russ, the element of movement seemed particularly important. He was always moving when reading. In one of the earliest field notes it was already noticeable:

> . . . . Russ crosses his ankles and is swinging them back and forth under his chair. His head is tilted slightly to the left. Mrs. Greenman whispers to me, "Haptic" as he is reading. She is referring to the motion that he is making as his legs swing back and forth and his body moves slightly along with them. Russ stops swinging his legs for a minute while Mrs. Greenman explains something to him. He starts reading and the swinging starts again. Russ stops reading a minute while Mrs. Greenman points with her finger and says, "she." Russ says, "She was." He corrects

> himself. Apparently he said "saw" instead of "was." Mrs. Greenman takes his book and asks him some questions about what he had just read. Russ leans back on the chair, tips it slightly and balances on the back legs of the chair. As he thought of the answer, he rocks his left leg back and forth. It stops when he begins talking . . . .
>
> (N. p. 7, #48-52)

In addition, Mrs. Greenman wanted him to be especially aware of how important this was for him. She would often send him out of the room to the gym so that he could do some exercises before reading or when he had difficulty during reading. He asked Mrs. Greenman how these exercises worked because he didn't understand it. Mrs. Greenman explained very briefly how the brain works. She showed him her two fists to indicate the left and the right side of the brain and how sometimes they need to have a connecting force between the two sides in order to have Russ be able to read the words on the page. Mrs. Greenman would often stop to explain these concepts to her students. She was concerned that they understand themselves For example, she related a particular incident about Russ:

> "Russell, the other day he was just struggling, just struggling. I mean every word was labor, and he stopped after he got through with two paragraphs, and he said, 'I just don't understand. I can talk so well, you'd think that I'd be able to read.' At that point I took him to the library, and then we went through some of the stuff. 'There's a reason for that,' I said. 'This is just between me and you, but have you noticed the difference between how you talk and Adam talks? Adam talks in halting phrases. It's just very hard for him to formulate a sentence.' 'Yeah, that's true,' Russ agreed. So then we went

> back, and I told him that they really feel that reading is on the left side of the brain and language is on the right side of the brain and that his artistic ability was on the right side of the brain and how he can see a whole picture, and how he can improve on things, and so forth, is right (brained). And that so much of the reading thing is on the left. Then he gave me some examples of how that applied. So he did understand.
>
> (N. p. 67, #344 TS 5)

His strong tactile preference was also evident from the beginning, as was his ability to concentrate. He used his hands to draw, create, and count. In fact, the process of using his fingers to assist in math became a help as well as a hindrance and resulted in a completely opposing description of him. During one math class, for example, he spent the entire period on one paper and he relied heavily on counting with his figures. He was quite persistent in completing the task, although it appeared that he was struggling considerably. The field note entries of 3/11/87 describe some of his behaviors, but more importantly they reveal the opinion of Mrs. VanLaan:

> . . . . At 1:58 P.M. Russ lifts his head and stares straight ahead. Both hands are holding his pencil against his lips. He shifts his eyes to his left but does not make eye contact with anyone, and just seems to be staring. He looks at his paper again, the fingers of his left hand begin to move in a controlled rhythm and then his pencil begins to move. He looks up and puts the end of his pencil against his teeth. He pushes it forcefully and then chews on it lightly. At 2:07 his focus is back on the paper and his pencil begins to move, fingers move again as if counting. He looks at his finger tips of his finger nails on his left hand, and plays with his hand as if creating something flying. His lips

> make a sound to go along with it. Mrs. VanLaan says, "Russ, why don't you come up here with your math paper?" Russ looks up quickly, but leans over the paper and moves the pencil and fingers in deliberate motion. Later Mrs. VanLaan told me that he had replied, "I can do it." Mrs. VanLaan called him again, "Russ, do you want to come up here a minute?" Russ continues to move his pencil and his fingers at the same time. He's counting still. At 2:10 Mrs. VanLaan is working with individual students still at her desk. Russ has his head on his left hand now. Mrs. VanLaan gets up and goes over to Russ' desk, She talks to him and he says "16". The rest is not audible. She comes to the back of the room, sits by me and very quietly tells me that Russ is working on multiplication and that this seems to be very difficult for him. "He just simply does not know the multiplication tables" . . . .
>
> (N. p. 94-95, #451-454)

Russ had also chosen not to participate in an activity intended to motivate the memorization of the multiplication tables in Mrs. VanLaan's room. The activity required the students to respond to multiplication flash cards, something he had had difficulty with in Mrs. Greenman's room. When relating this particular incident to Mrs. Greenman, she seemed quite surprised. She explained that Russ did know the tables, but that he simply did not trust himself. His apparent use of his fingers to count definitely slowed him down. She also related an activity from earlier in the day when Russ had recited the 9's for her and had accomplished the task quite readily.

In all the dealings with Mrs. Greenman, it was evident that she had a genuine concern for her students, and remained up-front in her dealings with them. She seemed to

have the ability to view any situation from many angles and was never hesitant to admit that she didn't know something. When she gained new knowledge of any sort, she always shared it, or utilized it in some way. She had, for example, immediately adjusted the lights in her room after realizing Russ' sensitivity to bright light. She realized the importance of providing for individual needs in any way she could. Even before the LSI summaries were available, Mrs. Greenman exhibited great sensitivity. Take, for example, an illustration involving Dori. Mrs. Greenman was well aware of Dori's verbal ability and her need to socialize. She had mainstreamed her into a math class in part to accommodate this need, and in part because she was working on the same math concepts. (N. p. 180, #804). She also had Dori seated in the very first desk of the middle row. Although not confirmed by Mrs. Greenman this could have been another attempt to provide immediate feedback as well as maintain interaction with Dori--another element that was later significant on her LSI.

Mrs. VanLaan, however, never seemed to address these needs with the same deliberation. For whatever reason, the resource room students always sat together. For the major portion of this study, they sat facing the wall and being the farthest distance from the teacher's desk. It did not provide Dori with frequent teacher interaction. She was often observed taking her work to the teacher or showing it

to other students. On the occasion of a new seating arrangement (which included all the students except the special needs students) Dori wished to have her place changed, too, but only after other students verbalized the same request. The student teacher, however, told the class that she wanted to give them time to adjust to the new arrangement before she honored any request for changing any seats for any reason. Dori listened to this explanation and in a few minutes approached the student teacher to request that her seat be changed. A field note of 4/23/87 reads:

> . . . . But the student teacher replies, "Where would you like to change to, Dori? Why would you like to change?" She explains that Dori needs to take time to get along and that if she continues to be bothered, she (the student teacher) would see what she could to about this seat. But for now she wanted Dori to remain where she was . . . .
>
> (N. p. 280, #1142)

The seating arrangement never changed.

Of particular curiosity was the use of light in Mrs. VanLaan's classroom. She had, for a long time, expressed a sensitivity to bright light and made a point to wear sunglasses whenever she was outside. Perhaps without realizing it, she carried this need into her classroom. The lights in her room were noticeably left off many times. On occasion, she turned them off to signal for less noise, but for the most part they were simply not turned

on. For example, on 5/13/87 the lights remained off after recess until one row was turned on 20 minutes later. During a cleanup period they were turned off again and remained that way. On 4/28 they were turned on after recess and then turned off forcibly because "everyone was asking at the same time and being very rude and pushy." (N. p. 305, #1243) Whether or not the lights were a means of control, an individual preference, or both, would need to be explored at another time.

Although the content of this study concentrated on observable behaviors connected with learning styles, it should be explained that Mrs. Greenman also used methods that have not been as clearly recognized or scrutinized in research. On occasion she had the students read upside down pages, read while on their stomachs, sway while reading, and use colored acetate sheets on their books. One method, however, was most intriguing. Mrs. Greenman's aide had a deaf daughter and she introduced the students to signing. Not only did this appear to offer the students a fascination, but it provided a significant breakthrough for some of them. Mrs. Greenman talks about Jason, for example:

> "Jason has learned the short vowels. He has cue words. He was reading a whole list of 'bl' words that used the short vowel, i, u, o, and a, and he was interchanging the vowel sound all of the time. There was nothing consistent there at all so I signed the key word to him which is 'i-p' which is the key word for 'i'. And I signed 'i-p' and I said, 'Look Jason', and he looked at it, and

> he read it, and said 'ip' to himself. And he looked at the page, and he looked at only the 'i-p.' Okay, ip, lip, clip. What a neat tool to use because if 'i' had had to be verbally given him, he would never have found the short vowel-even if he knew it. He didn't have the way to go back to it. I guess I could have written it but it doesn't give the extra multi sensory thing that the hand spelling does and then he had to go back, isolate the sound for the key word."
>
> (N. p. 72, #362 TS 5)

and

> ". . . . When I did sign the letter to him, he would give me the sound, now that I think about it. When he had a problem thinking 'it' or 'at', if I signed it to him, then he could read the word. He could look at it and not read it, but when I signed it to him then he knew it was 'it' and that was finger spelling. Now, it was finger spelling, it was not the word sign. So yes, now that I think of it the signing was very significant to him. It did make a connection there evidently.
>
> (N. p. 209, #901 TS 6)

The impact on Dori seemed equally distinct. Asked about using signing when she was working on spelling a brief conversation records:

> **Researcher:** Do you ever get them mixed up in your mind then, if you do this. I mean if you do this with your hands does it help you keep them straight in your head?
> **Dori:** Yeah.
> **Researcher:** Okay, so if you have a difficult time remembering how a word is spelled, then you sign it?
> **Dori:** Um-hum.
> **Researcher:** Are you a good speller now?
> **Dori:** Yeah!
> **Researcher:** Okay, does it help you in reading, too? I noticed you were using a little bit of it in reading today.
> **Dori:** Yeah -- Um-hum.
>
> (N. p. 38, #299-230 TS 4)

Mrs. Greenman shares an example of Dori's use of signing after she discusses Jason:

> ". . . And it also happened with Dori with the word 'with'. The other day she couldn't read the word 'with'. We had used the sign previously so I signed it to her. She looked at the word, we reviewed a couple of times with the sign, and she never missed it again. I'm really sold on it."
>
> (N. p. 73, #364 TS 5)

The references to signing--practicing as a class, practicing individually, using it while working, using it to communicate with someone across the room, requesting permission to leave for recess, using it in other classrooms -- are abundant throughout the research notes. Every student was able to use signing in some way. The benefit accrued, however, would be a source for another complete study.

Although the time elements prohibited lengthy observations of how the students actually used the Learning Style Inventory information, it was clear that for three of them the information reinforced what they already knew. More significant, however, is the realization that it gave Russ, in particular, confidence to voice his preferences. As Mrs. Greenman had stated:

> . . . . That he (Russ) felt very secure in knowing that he was more comfortable without the direct light above him and that now was beginning to verbalize that fact . . . .
>
> (N. p. 542, #1991)

This study will, however, not end here. About a dozen

learning disabled/gifted students have been given the Learning Style Inventory, as well. It is the intention of the researcher to continue seeking out these students in the hopes that our knowledge and understanding of this select population might be enhanced. They cannot be ignored or denied.

Perhaps a comment by Mrs. Greenman about Russ offers the closing remarks:

> ". . . . They do learn to be an individual. That's one reason, I think, why he dares to be artistic. Because he has had to be an individual and stand on his own by himself because he hasn't fit. He's gotten in all the lines with all the rest of the kids, and it hasn't worked . . . ."
>
> (N. p. 68, #347 TS 5)

CHAPTER V

Summary, Discussion, Conclusions, and Recommendations

Summary

This investigation describes a qualitative study of children who tend to be labeled as "learning disabled", "gifted" and "learning disabled/gifted." The focus of the study was on the preferred learning styles of these students. Answers were sought to the following questions:

1. How do these students interact with their age mates and their school environment?
2. How are their preferred learning styles made manifest in their behavior?
3. How well do they understand the ways they learn?

Six students from an approximate third grade age level were specifically observed for this study. Two students were classified as "learning disabled," two others were classified as "learning disabled/gifted," and two additional students were labeled as "gifted".

Selection of students was accomplished with the recommendation of knowledgeable teachers, discussion with parents, interviews with the students, work samples, and guarded amounts of testing results. The Dunn, Dunn, and Price Learning Style Inventory was administered to each student specifically observed and attempts were made to find other "learning disabled/gifted" students who might also take this inventory for comparative purposes.

During some of the visits audio tape recordings were attempted and one video-tape was made to facilitate "revisiting" and analysis. All methods were employed in order to assure the procedure known as "triangulation" (Gordon, 1980).

In addition to participant observation and these mechanical recordings, the research included formal and informal interviews, gathering artifacts, talking to parents and teachers, and conducting follow-up sessions (for interpretations) with every student who took the Learning Style Inventory.

The activities that took place in Mrs. Greenman's room and Miss Knight's class provided a setting for a variety of interactions. In addition, the mainstreamed classrooms of Mrs. VanLaan, Mrs. Laramy, and Miss Murray were utilized to observe these interactions in an alternative setting.

The phenomena that surfaced as a result of this study were many and varied. Not unlike the findings of Whitmore and Maker (1985) and Elsenberg and Epstein (1981) the handicap(s) of the learning disabled students may have obscured the expression of any special gifts and talents. Russ and Dori (the two learning disabled/gifted students) were not particularly acknowledged for their special abilities and talents by the mainstreamed teachers and were, instead, treated as students belonging to Mrs. Greenman's room, or were classified as members of the

resource room first and foremost. Their apparent difficulty with certain academic skills seemed to become the primary focus of attention in the mainstreamed classrooms and often excluded any acknowledgment of other strengths.

Jason and Bob (the two learning disabled students) experienced similar classifications, and terms such as "Mrs. Greenman's students," or expressions such as, "in our room the rules are . . . ." were often used with them.

The seating arrangements in the mainstreamed classrooms also appeared to be a striking practice among the teachers. With few exceptions, these special needs students were always seated together and the seats were assigned.

The interactions of the two "gifted" students, Rob and Brian, did not appear to be particularly distinct from the other students in the class and in the school. For the most part, they were viewed as a part of the total class unit and did not appear to be viewed apart from that structure. It is questionable if the music or gym teachers were even aware of their "gifted" label.

The second part of this study involved the administration of the Learning Style Inventory and its subsequent interpretation. For the most part, considerable differences were apparent among the preferences of all six students. Similarities, however, did exist within each of the particular student classifications. Dori and Russ had

several variables in common, as did Bob and Jason and Brian and Rob.

The acknowledgment and understanding of learning style preferences were quite diversified among the teachers involved. Such knowledge appeared to range from considering learning style information to be immensely valuable on the one hand, to having no awareness of its possibilities on the other hand. Mrs. Greenman and Miss Knight were both teachers who made every effort to continue their own professional growth. They seemed to be on unending quests to seek ways of reaching their students and stimulating themselves. Were the other teachers as equally zealous in these same efforts?

Mrs. Greenman, particularly, made a point to explain the learning processes to her individual students with the hope in mind that the more they knew about themselves the better able they would be to deal with learning difficulties while maintaining their individual self worth. Was this approach, however, supported or undermined in the mainstreamed classrooms?

Although the students themselves were forewarned that the Learning Style Inventory would not provide any particularly surprising discoveries about themselves, they were delighted with their profiles and found great enjoyment in hearing about their preferences. For various reasons, not all profiles were interpreted, but those that

were seemed to provide a sense of confidence that had not been evident before in these students.

Discussion

As may have been surmised by the reader, the benefits accrued with the understanding of learning styles can be valuable to both the student and the teacher. These efforts, however, cannot assure complete success in overcoming all learning difficulties. In spite of the best endeavors of Mrs. Greenman, for example, Bob was still not reading. Yet, this student was a child with remarkable character. His scholastic efforts were in jeopardy, but his learning had not ceased. Mrs. Greenman concentrated on his strengths, but other teachers could see only his weaknesses. With these kinds of views, doesn't it appear that most efforts of school personnel to teach Bob to read are failing and are destined to keep on failing?

Perhaps a few more pieces have been found, but it appears that this study has raised as many questions and concerns as it attempted to address. The issues of labeling, for example, could encompass an entire research project in itself. What of the parent concern for their children when these individuals are not acknowledged for having any special gifts or talents, and indeed, do have them? Why are many schools resistant to the possibility that learning disabled/gifted categories could exist within the same individual? What happens to the self worth of these individuals as they endeavor to progress through our

school systems?

Although the researcher's interpretations were laced with a background knowledge of the education of the gifted and a working knowledge of learning disabled students, this study can be viewed with varying interpretations and view points. It would, in all probability, appear in a different light were it viewed by someone not familiar with students bearing these labels. In addition, the intersection of the two fields appears to be only recognizable to those who have encountered it. The researcher has been one of those individuals. The interpretations of the student behaviors and descriptions leave ample room for dissenting points of view. However, these observations should not be isolated from the context in which they occurred.

To view the findings significant is also a matter of interpretation. For the purpose of the study, it was a great relief to find someone as knowledgeable and interested in learning styles as Mrs. Greenman. Equally of importance was the awareness of Miss Knight and the enthusiasm with which she worked with her bright students. Although her students were not all categorized as gifted, Miss Knight expressed her interest in working particularly with the top reading group:

> . . . ."Oh, yeah, I love this class. This is my favorite time of day. Miss Miles hates to see

> (the) others coming because she has two bottom groups, but I could really enjoy a whole class like this!"
>
> (N. p. 53, #385 [85])

Not all teachers, however, believed in these philosophies or methods of teaching. Numerous concerns surfaced as a result. How do we educate to make mainstreaming effective? How do we make these labels more comfortable to accept, for the students as well as the staff? How can we help teachers see the strengths in each student? Why do we appear to teach towards the weaknesses? Do we make too many assumptions when a student carries a label? Do we allow expectations to blind the realities? How do other mainstreamed classrooms integrate special students? How do "regular" students view "special needs students?"

The questions are unending. The study could continue indefinitely! Given time (and finances) it would have been possible to gather further research on additional "learning disabled/gifted" students in particular. It is, in fact, the desire and plan of the researcher to pursue such a goal in the very near future. A fragile thread of connection has already begun to appear just in the first dozen or so students seen. All of them appear to be leaning toward a strength in what is currently classified as a dominant right hemispheric function. These students seem to exhibit special abilities in creativity, in the

arts, in the advanced development of the fine motor skills or body agility. Will these similarities exist in a broader sample population? What of the dilemma that schools do not allow the two labels to co-exist? Who does recognize the gifts as well as the shortcomings of these students? How can these special abilities be nurtured in the schools?

Conclusions

What was found, essentially, in this study, were two teachers who liked special needs students, and who used various teaching methods to accommodate their individual needs. In addition, these teachers provided themselves with opportunities to stay current of educational trends and ways to spark enthusiasm for teaching. The same cannot, however, be said of all the teachers encountered. What, then, happens to the students placed in the classrooms of these teachers? Where and who are the advocates for the special needs students?

This research study serves only as a beginning for further investigations. It is a limited attempt to unravel the complexities evident in special needs students and the atmosphere that surrounds them in the schools.

In order to avoid creating unnecessary frustration and anxiety for special needs students and to promote a holistic approach to education, it would seem feasible to screen students not only for the identification of handicaps, but to determine strengths and special abilities

as well. Alternative program options should be explored in order to accommodate these varying abilities and the focus should shift from the sole concentration on weaknesses to a broader, more encompassing approach that would also allow the development of the strengths. Focusing on strengths instead of on remediating weaknesses could play a powerful role in helping this special population realize more of their potential.

According to McDermott and Aron (1978), our American culture is preoccupied with locating the natural intellectual skills of our students to such an extent that we accept the flimsiest of evidence during the first days of school. Once the students are categorized as more or less able, we then, "by way of self-fulfilling prophecies, arrange to have the children designated as less able actually accomplish less than the others" (p. 45). If the students enter a class in which they are handled unequally, if they are given less adequate learning environments on the basis of their less developed entering school skills, the chances of their catching up or even fitting in according to McDermott and Aron, will be minimal.

If, however, mainstreaming is viewed as a primary program goal in itself, then educators need to realize that students will experience differing degrees of success with this approach. This research study shows that we cannot assume that these students will encounter acceptance and/or success automatically. In spite of well intentioned

efforts, the mainstreaming options available may not necessarily prove to be the most beneficial to the students involved.

Efforts could be made to analyze learning style preferences of special needs students as well as learning and teaching style preferences of the teachers. Perhaps a closer match of student and teacher, according to their styles, might result in less friction and more tolerant learning atmospheres.

At the very least, educators could help make students aware of their particular learning styles and how these preferences may impact on their learning processes. This knowledge could aid students in choosing activities and processes that utilize their most efficient or preferred modes of learning. In addition, it might well serve as a means of providing the reassurance so often needed by assisting these special students in the understanding of themselves.

Parents of special needs students often exhibit a desire to be specifically informed about any information that should be utilized at home and serve as a support to the schools. This might increase an understanding of a child's particular learning style preferences and point out the significance of any particular element. It is of particular importance to discover that the learning style preferences of children are often much different than those

preferences exhibited by their parents.

Perhaps a final statement should deal with the testing, or identification process used to determine the categories of special needs. Cognitive skill testing is still the most often "accepted" means through which students are labeled, but why is it that our perceptions remain so confined? When, in real life situations, do we ever depend solely on the use of a test to determine our abilities? Should we not seek out a broader spectrum of information in order to understand the intricate functioning of the individuals at risk here?

The decision making process of committees of educators as they decide to place students into special education programs or retain them in regular classrooms was examined by Mehan in 1983. Often, different committee members presented different views of the student's disposition. Classroom teachers and parents provided accounts of the student's performance that competed with the view of the psychologist or district representative. Yet, the version of the student's case that was provided by the psychologist or the district representative prevailed by the meeting's end. During the course of these meetings the professional reports presented by psychologists, nurses, and administrators were treated differently than the lay reports presented by parents and teachers. "Despite the fact that they were composed of a highly technical

vocabulary, the professional reports were accepted without challenge or question, while the lay reports were continually interrupted by requests for clarification and further information" (p. 187).

Although the approaches may vary somewhat from school to school, and district to district, it appears that too much is still left to chance. Can we ever fully recognize the potential that is often obscured or completely hidden in these students?

Recommendations

Findings from the current investigation suggest a number of possibilities for further research.

1. Most urgently the study could be duplicated using different samples to determine whether the observations of this study have broader application. Alternative sample groups might include another special needs age group, students from the same or other schools, and schools with differing programs.

2. Duplication of the study using a different instrument for assessing learning style characteristics is also suggested to determine the thoroughness of information obtainable and the usefulness of that information. Moreover, comparisons of instruments might assist in determining if any correlations of

modality preferences are evident between instruments. A few researchers have formulated learning style instruments that assess more than one style dimension and several of the elements. NASSP, however, claims that they have developed the only Learning Style Profile that measures all major elements of the three dimensions of style (Keefe, 1987). Certainly, this would be worth investigating.

3. Longitudinal research on learning style preferences and the factors affecting these choices could help educators determine the specific needs of students and how important they are. Learning style characteristics should be identified and students should be matched and mismatched to further ascertain achievement levels, attitudes, and disciplinary outcomes to provide accurate information for eventual staff development and improved teaching techniques.

4. Further investigation into the use of signing is also recommended. Publications such as Signing for Reading Success by Hafer and Wilson (1986), should be infused into our general teacher education programs as well as our special education sections. In addition, the M.A.K.A.T.O.N. program, originating in England, might be expanded in its use beyond the population of

the severly multiple handicapped with no speech.

5. Perhaps an investigation into the course content of teacher preparation courses could more readily define where, and to what extent, we are now providing information and resources concerning special needs students. Is there, for example, information provided in general education courses or only in specialized and/or elective courses? In addition, are we providing anything on the graduate level to assist present classroom teachers in working with these particular students?

Schools that have experimented with teaching students through their individual learning styles have initially reported the increased achievement, improved discipline and higher attitudes of their students (Cavanaugh, 1981; Hodges, 1982; Jenkins, 1982; Lemmon, 1982). They report that it was neither costly nor difficult to divide a classroom into sections within which varied activities can be conducted. However, a crucial element that appeared to contribute to their success was the demonstrated instructional leadership of their principals. These were the individuals that introduced the learning styles construct to their faculty and assisted in the implementation of related instructional methods. But,

where and with whom then, does the ultimate responsibility lie for instructional improvement? Perhaps it would be essentially beneficial to investigate the powers behind the scenes and determine the support that existed with the many successfully implemented learning styles programs.

As an outgrowth of initial research conducted by Cross (1982), Dunn & Griggs (1985), Dunn & Price (1980), Kreitner (1981), Ricca (1983), Wasson (1980), Dean (1982), Hodges (1982, 1985), Jarsonbeck (1984), Johnson (1984), Murray (1980), Siebenman (1984), Tappenden (1983), Weinberg (1983), Whitmore & Maker (1985), and Daniels (1983), it would appear that we know a little about the learning styles of "gifted" students, less about the learning styles of "learning disabled" students, and extremely little about the "learning disabled/gifted" students. Further investigations should be conducted to determine whether learning style elements congregate in these selected populations and whether students who evidence them require a totally different learning environment from that provided by conventional classrooms.

> The joy of learning is often a nightmare for more than 10 million normal, bright, intelligent children--just because no one has recognized their learning difference. Understand their frustration--and begin to understand the problem.
>
> Let no child be demeaned, nor have his wonder diminished, because of our ignorance or inactivity. Let no child be deprived of discovery, because we lack the resources to discover his problem. Let no child--ever--doubt himself or his mind because we are unsure of our commitment.

APPENDICES

APPENDIX A

Learning Style Inventory

LEARNING STYLE INVENTORY

1. I study best when it is quiet.
2. I like to make my parents happy by getting good grades.
3. I like studying with lots of light.
4. I like to be told exactly what to do.
5. I concentrate best when I feel warm.
6. I study best at a table or desk.
7. When I study I like to sit on a soft chair or couch.
8. I like to study with one or two friends.
9. I like to do well in school.
10. I usually feel more comfortable in warm weather than I do in cool weather.
11. Things outside of school are more important to me than my school work.
12. I am able to study best in the morning.
13. I often have trouble finishing things I ought to do.
14. I have to be reminded often to do something.
15. I like making my teacher proud of me.
16. I study best when the lights are dim.
17. When I really have a lot of studying to do I like to work alone.
18. I do not eat, drink, or chew while studying.
19. I like to sit on a hard chair when I study.
20. Sometimes I like to study alone and sometimes with friends.
21. I remember instructions best when I read them.
22. I think better when I eat while I study.
23. I like an outline for how I should do my school work.
24. I often nibble something as I study.
25. It's hard for me to sit in one place for a long time.
26. I remember things best when I study them early in the morning.
27. I like to learn by talking with people.
28. I hardly ever finish all my work.
29. I usually start my homework in the afternoon.
30. I really don't care much for school.
31. I like to feel what I learn inside.
32. Sound usually keeps me from concentrating.
33. If I have to learn something new, I like to learn about it by having it told to me.
34. At home I usually study under a shaded lamp while the rest of the room is dim.
35. I really like to do experiments.
36. I usually feel more comfortable in cool weather than I do in warm weather.
37. When I do well in school, grown-ups in my family are proud of me.
38. It is hard for me to do my school work.
39. I concentrate best when I feel cool.
40. I like to relax on rugs, carpets, a couch, a soft chair, or a bed when I study.

41. I think my teacher feels good when I do well in school.
42. I remember to do what I am told.
43. I like to learn by reading.
44. I can block out sound when I work.
45. I am happy when I get good grades.
46. I like to learn most by building, baking or doing things.
47. I usually finish my homework.
48. If I could go to school anytime during the day, I would choose to go in the early morning.
49. I have to be reminded often to do something.
50. It is hard for me to get things done just before lunch.
51. It is easy for me to remember what I learn when I feel it inside of me.
52. I like to be told exactly what to do.
53. My parents are interested in how I do in school.
54. I like my teacher to check my school work.
55. I enjoy learning by going places.
56. When I really have a lot of studying to do I like to work alone.
57. Sometimes I like to learn alone, with a friend or with an adult.
58. I can sit in one place for a long time.
59. I cannot get interested in my school work.
60. I really like to draw, color, or trace things.
61. I remember best the things I hear.
62. I remember things best when I study them in the afternoon.
63. No one really cares if I do well in school.
64. I really like to shape things with my hands.
65. When I study I put on many lights.
66. I like to eat, drink, or chew while I study.
67. When I really have a lot of studying to do I like to work with a group of friends.
68. When it's warm outside I like to go out.
69. I remember things best when I study them early in the morning.
70. I can sit in one place for a long time.
71. I often forget to do or finish my homework.
72. I like to make things as I learn.
73. I can think best in the evening.
74. I like directions before I begin a task.
75. I think best in late morning.
76. The things I like doing best in school I do with friends.
77. I like adults nearby when I study.
78. My family wants me to get good grades.
79. Late morning is the best time for me to study.
80. I like to learn most by building, baking or doing things.

81. I often want to start something new rather than finish what I've started.
82. I keep forgetting to do the things I've been told to do.
83. I like to be able to move and experience the motion and the feel of what I study.
84. When I really have a lot of studying to do I like to work with two friends.
85. I like to learn through real experiences.
86. If I could go to school anytime during the day, I would choose to go in the early morning.
87. I like to have an adult nearby when I do my school work.
88. I can ignore most sound when I study.
89. If I have something new to learn I like to read to learn about it.
90. I study best near lunchtime.
91. I like school most of the time.
92. I remember things when people tell them to me.
93. I often eat something while I study.
94. I enjoy being with friends when I study.
95. It's hard for me to sit in one place for a long time.
96. I remember things best when I study them before evening.
97. I think my teacher wants me to get good grades.
98. I like to do things with adults.
99. I really like to build things.
100. I can study best in the afternoon.
101. Sound bothers me when I am studying.
102. When I really have a lot of studying to do I like to work with two friends.
103. When I can, I do my homework in the afternoon.
104. I love to learn new things.

Developed by Dunn, Dunn, and Price, 1984

APPENDIX B

Sample Preference Summary

INDIVIDUAL PROFILE
LEARNING STYLE INVENTORY

Name: Sally Sunshine **Sex:** F **Year In School:** 3 **Date of Birth:** 10/75 **I.D. No.:** 1235

Group Identification: Elm Park School **Special Code:** **Date:** 10-26-1982 **Group No.:** 816

PREFERENCE SUMMARY

Raw Score	Standard Score		20	30	40	50	60	70	80	
1	44	1	Quiet			Noise Level			Sound Present	1
4	62	2	Low			Light			Bright	2
4	55	3	Cool			Temperature			Warm	3
1	44	4	Informal			Design			Formal	4
3	23	5				Motivation				5
2	40	6				Persistent				6
2	42	7				Responsible				7
2	49	8				Structure				8
4	70	9				Learning Alone Peer Oriented				9
3	75	10				Authority Figures Present				10
3	65	11				Learn In Several Ways				11
3	53	12				Auditory				12
2	53	13				Visual				13
4	49	14				Tactile				14
5	53	15				Kinesthetic				15
5	62	16				Requires Intake				16
3	49	17				Evening–Morning				17
1	37	18				Late Morning				18
4	59	19				Afternoon				19
4	59	20				Needs Mobility				20
4	60	21				*Adult Motivated				21
3	45	22				*Teacher Motivated				22
		23								23

LOW HIGH

CONSISTENCY: 99

*These scales are on LSI profile only.

PROFILE NO.:

REFERENCES

REFERENCES

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