

SOME APPLICATIONS OF GALLOWAY'S THEORIES OF  
INSTRUCTION FOR LEARNING DISABLED CHILDREN

by

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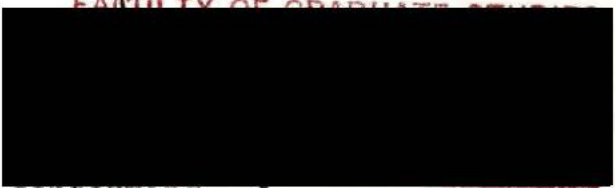
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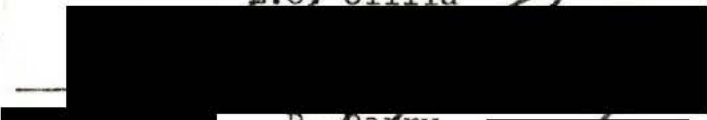
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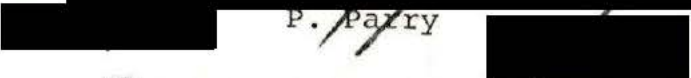
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*ABSTRACT*

This study investigated the feasibility and effectiveness of implementing Galloway's theory of instruction in special classes for learning disabled, elementary school aged children. Galloway's theory of instruction (1976) was based upon what he called "the conditions for learning," which are:

1. diagnosis (prerequisite skills)
2. the writing of objectives
3. reinforcement
4. attention to the task
5. adequate practice
6. corrective feedback

The investigation's design was an experimental-control group format. The experimental group, in special classes, was made up of 13 primary grade and 11 intermediate grade students. The control group, in regular classes, was matched with the experimental group for age, sex, intelligence, vocabulary, comprehension, word attack skills and spelling. The tests used to measure these variables were the *Slosson Intelligence Test*, the *Gates-MacGinitie Vocabulary*

*lary and Comprehension Tests* and the *Wide Range Achievement Test* (reading and spelling sections). Achievement gains over a period of one school year were compared for primary and intermediate groups, both separately and combined.

With but one exception, all comparisons significantly favored the experimental group. The exception was in the intermediate level vocabulary measure, where differences between experimental and control group averages were non-significant.

The discussion focussed on the possible explanation for the results relating to how the experimental group rigidly adhered to the conditions for learning.

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## CHAPTER I

### INTRODUCTION

Learning disabilities (LD), a subset of special education, may be one of the most urgent problems facing educators today. A report by the Canadian Commission on Emotional and Learning Disorders in Children, entitled *One Million Children* (1970), estimated between 10 and 15 per cent of the Canadian school population (5 to 19 years of age) require attention, treatment, and care because of emotional and learning disabilities. Moreover, these numbers may be increasing due to scientific advances that save and extend the lives of large numbers of children who would have died at birth or in infancy due to congenital defects or birth trauma. Another population of "damaged children" are those who experience accidents. Many of these children are now saved, because of advances in medical science, but it is statistically impossible to estimate accurately how many children make up this unique population.

Statistics indicate an increasing trend in all special education populations. In the United States between 1947-1972, a dramatic increase in the special education population is reported by Dunn (1973):

. . . special education enrollments increased nine times as rapidly as those in general education, with the greatest percentage growths in the area of neurological, behavioral, special learning and visual disabilities. (p. 19)

Below, in Table 1, a demonstration of the rapid growth in the special education population between 1958 and 1975 was reported by Kirk and Gallagher (1979).

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TABLE I: ENROLLMENTS IN PUBLIC SPECIAL SCHOOLS AND CLASSES (U.S.)  
1958-1975

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	<u>1958</u>	<u>1969</u>	<u>1975</u>
Mentally Retarded	213,402	703,800	1,350,000
Socially Maladjusted	27,447	99,400	255,000
Learning Disabled	No data	120,000	260,000

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Table 1 demonstrates how three particular special education populations doubled between 1969-1975. The dramatic increase probably reflects the increased awareness special needs children have had in society.

In addition parent groups, such as The Association For Children With Learning Disabilities have vigorously brought the problem to the attention of the general public, school administrators, and legislators. Teachers, too, along with other related professions, have contributed to the special education increase with a concern for individual differences

and identification of special needs students.

The consequences of a learning disability, such as being unable to read and write at a functional level, may be devastating and everlasting to the individual. Society, too, is burdened if corrective measures are not implemented with these children. Johnson and Mykelbust (1968) refer to this problem:

Proper programming is of benefit to society as well as to the individual. If these children remain in regular classrooms without special education they often become school dropouts. They cannot be readily employed because of their educational limitations and hence may remain dependent throughout their adult years with a long term drain on the economy. If special programs are established and appropriate remediation provided the majority become independent self-supporting citizens. Even if special education is necessary throughout the elementary and secondary school years or even beyond, the cost is nominal. (p. 49)

Historically, this need for special programming for the handicapped learner has produced one of the major controversies in education.

Until the 1950's many handicapped children were placed in self-contained special classes. In the 1960's began an increasing trend away from educating handicapped learners in special classes toward integrating them into regular classrooms for the majority of their school day. In the 1970's, this momentum increased as a result of court decisions

in the United States mandating the return of certain handicapped learners to general education. Prior to 1975, at least 36 cases appeared before state and federal courts focussing on guaranteeing the handicapped child the right to an education, the right to appropriate treatment, and the opportunity for appropriate placement (Macmillan and Semmel, 1977). On November 28, 1975, United States President Ford signed into law the *Education of All Handicapped Children Act*, PL 94-142. The Act established the rights of handicapped children in the United States to a free and appropriate education. Out of the initial movement away from special classes, court actions, and finally Bill PL 94-142, emerged the educational concept of "mainstreaming". Perhaps the most widely cited definition of mainstreaming is that offered by Kaufman, Gottlieb, Agard, and Kukic (1975):

Mainstreaming refers to the temporal, instructional, and social integration of eligible exceptional children with normal peers. It is based on an on-going individually determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional, and supportive personnel.  
(pp. 40-41)

Supporters of the mainstreaming concept believe the practice superior to special class arrangements because:

1. it removes the stigma associated with special class placement;

2. it enhances the social status of these children in the perception of their non-handicapped peers;
3. it facilitates the modelling of appropriate behavior as exhibited by the non-handicapped peers; and
4. it provides a more cognitively stimulating environment. (Kaufman et al. 1975)

However, supporters of special class placement contend advantages over regular class placement because:

1. it provides a less frustrating and less humiliating environment for the exceptional child;
2. it provides smaller classes, allowing for more individualized instruction, and an aide for all or part of the day, thus reducing further the adult-pupil ratio;
3. it provides financial resources with which to buy specific materials often needed by exceptional children; and
4. it provides teachers who are usually better trained in diagnostic and remedial techniques than are regular class teachers.

Kirk and Gallagher (1979) demonstrate in Table 2, the projected advantages and disadvantages of the two major alternative educational environments and strategies currently being used, special class and mainstreaming.

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 TABLE 2: TWO ALTERNATIVE MODELS FOR EDUCATING EXCEPTIONAL CHILDREN
 

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Mainstreaming
Description

The exceptional children stay in the regular classroom for most of the day. Although they receive some special help from resource teachers or specialists, they are considered a part of the regular program.

Rationale

The exceptional children will best be able to cope in a normal world by learning to adapt in as normal a school environment as possible. Their lessons will not be too easy and thus not fail to challenge as in some special classes. Special instruction will be available when needed.

Implementation Problem

Handicapped children can get lost in the shuffle and will always be at or near the bottom of the class no matter what is done. Individualized instruction will be limited by the shortage of special resource teachers.

Special Class
Description

The exceptional children are placed in a small group with a specially trained teacher. In most instances they will remain with that group for the better part of the day and sometimes will stay with the same teacher for two or three years.

Rationale

The exceptional children will not be frustrated, humiliated, and discouraged by constant failure or inappropriate requirements they experience in the regular program. The special teacher should be able to teach the child at his or her level and restore self confidence and enthusiasm.

Implementation Problem

Special classes are often used as dumping grounds for behavioural problems or difficult children. Once in this class, it is very hard to get out. Often treated as "dummy class". The teacher may be too impressed by children's mental or emotional limitations and fail to challenge them.

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The disenchantment with self-contained special classes culminated as a result of several lines of reasoning that appeared in a social climate that was receptive to the rights of the handicapped. MacMillan and Semmel (1977) refer to the time:

Minority group children were over-represented in special class programs, following legal fights over racial segregation slightly over a decade earlier. Research evidence, while often inconclusive, was interpreted as failing to substantiate the validity of special educational programming. One question, however is not easily answered when reviewing the move away from special classes and toward mainstreaming - specifically, was the impetus behind mainstreaming political rather than evidentiary? In other words were the court decisions that led to mainstreaming decided on the basis of law rather than evidence? (p. 3)

Kirk and Gallagher (1979) allude to similar conclusions:

. . . the diagnosis of mental retardation was often based on a score from intelligence tests that had been standardized on whites. This caused the assignment of a disproportionate number of minority-group children to special classes. In the large cities the special classes enrolled a disproportionate number of blacks, Puerto Ricans, Mexican-Americans and Indians. (p. 482)

Mercer (1972) found, in San Francisco, black children in classes for the educable retarded at twice (53 per cent) their proportion in the population (27 per cent). In Riverside, California there were 300 per cent more Mexican-Americans and 50 per cent more blacks in special classes than their rate in the community. Jones (1976) found the

inappropriate use of intelligence tests, such as administering verbal intelligence tests in English to Spanish-speaking children, created widespread suspicion that special education was being used as a means of getting troublesome minority-group children out of the regular class. Early research on the efficacy of special class placement showed fewer beneficial effects than was expected (Cegelka and Tyler, 1970). Academic achievement of retarded students in special classes was not significantly different from that of retarded students in regular classes. A fundamental, but not necessarily accurate assumption of the researchers in the efficacy studies was that the goals and objectives of special class teachers were academically identical to those of regular class teachers. Elenbogen (1957) recognized this discrepancy between the two types of classes:

Differences in the two types of academic settings as indicated by the results obtained from the various psychological instruments and other materials used, picture the special classroom as being the more concerned with overall personal development and growth of the child but lowest in the academic area which are commonly developed within an educational framework. (p. 42)

Accordingly, special classes became inexpedient based on human rights, wrongful placement and research evidence.

However, the educational concept of special classes has not been demonstrated as being inferior; instead, human error seems more responsible for the demise of special classes.

Mis-use of tests and test information for placement purposes must be the responsibility of those people throughout all school districts who place students in special classes.

Weaknesses in the field research acknowledged by Dunn (1973) and assumptions of equal goals and objectives between regular and special class retardates are related to errors in human judgement. It is not the intention here to suggest a complete return to self contained special classes; rather, it is to caution against the elimination of an educational alternative, that properly used, could be of benefit to many exceptional children. Since 1974, federal and state legislation in America has been passed which support the mainstreaming policy. Many of the laws use the term "least restrictive alternative" to define required programming. Special programs are seen as more restrictive than regular class programs; school systems must be prepared to support any placement other than a regular one. British Columbia is moving quickly toward the adoption of mainstreaming policy.

The British Columbia Teachers' Federation Newsletter, May 1977, reported the special class enrollment in British Columbia for 1974-75 was 7,296 students. One year later, 1975-76, the reported number of special class students was 5,018, a reduction of 2,278 students. The dramatic decrease in the number of special class students accounts

for over 30 per cent of the previous years total. Evidence of British Columbia's trend toward mainstreaming comes from the Minister of Education's Special Education Program's *Guidelines 1977-78*:

1. There is the expectation in British Columbia that public education for all handicapped children should be provided and that it should be provided in as normal a context as possible.
  
4. Special Education should be provided in a setting which promotes maximum interaction with the general school population and which is appropriate to both.

#### *Definitions of Learning Disabilities*

To call a group of things or set of observations a category implies that all members of the group share in common a number of distinctive characteristics. The definition should specify the differences between members and non-members. Definitions of the LD child vary but in October 1977, Cruickshank submitted to the Advisory Committee of the Canadian Association for Children With Learning Disabilities, Ottawa, the following definition of the learning disabled child:

Learning disabilities refer to problems of children and youth which adversely affect academic school environment, and secondarily emotional growth and adjustment. They may include problems of any etiological origin in children and youth of any age and of any intellectual level which are the results of perceptual processing deficits which in turn

are the results of a (diagnostic or assumed) neurophysiological dysfunction occurring at prenatal, perinatal, or postnatal periods of development.

Cruickshank's definition is not unlike that of Strauss and Lehtinen (1957), twenty years earlier:

A brain injured child is a child who before during or after birth has received an injury to or suffered an infection of the brain. As a result of such organic impairment, defects of the neuromotor system may be present or absent; however, such a child may show disturbances in perception, thinking and emotional behavior, either separately or in combination. These disturbances prevent or impede a normal learning process. (p. 4)

Both definitions require the presence of some underlying psychological disorder that may or may not be accompanied by evidence of central nervous system dysfunction.

Viel (1979) refers to the difficulty of specific identification of the LD child.

Based on test scores or clinical observations, these underlying disorders might be described as deficiencies in auditory memory, perceptual motor coordination, attention, spatial abilities or visual sequencing skills. Although many children identified as learning disabled present an usually high instance of positive neurological signs, other children may manifest similar test findings but be without significant learning problems. Still others may be found with no evidence of neurophysiological dysfunction yet show severe learning problems. (p. 49)

The degree to which soft neurological signs or process deficits affect acquisition of higher cognitive skills such

as reading or computational ability has yet to be fully demonstrated (Myers and Hammil, 1969; Haring and Bateman, 1977). All learning disabilities observed in a classroom may not be caused by central nervous system dysfunction. Children's inability to learn can be affected by developmental lags, nutritional and chemical imbalances, experiential deficits, genetic variations, metabolic disorders or emotional disturbance. To consider only neurophysiological dysfunction a basis for defining learning disabilities is narrow and restrictive. It is possible to discuss learning disabilities in terms other than organic impairment.

Frierson and Barbe (1967) recognized the need for two definitions, one to satisfy the neurophysiological concerns and the other to satisfy poor academic performance of individuals with normal intelligence and no diagnosed neurological dysfunction. Frierson and Barbe offered the following definitions:

Learning disorders might best designate a known impairment in the nervous system. The impairment may be the result of genetic variation, biochemical irregularity, perinatal brain insult or injury sustained by the nervous system as a result of disease, accident, sensory deprivation, nutritional deficit, or other direct influences. (p. 4)

Learning disabilities might best designate a demonstrated inability to perform a task normally found within the capability range of individuals of comparable mental ability. (p. 4)

A theoretically acceptable definition for teachers is not necessary as their practical concern is meeting the needs daily of LD children in their classes. The present study selected learning disabled subjects by the following definition:

. . . any child of average intelligence without sensory loss or gross motor defects whose school achievement is one to one and a half years below his chronological age and grade placement for two or more subject areas in primary grades, and two years or more below his chronological age and grade placement for the intermediate grades in two subjects or more as measured by standardized school tests.

It is the thesis of this study that effective instruction is a primary contributor to effective learning. Educators may be effective at identifying learning disabled children but this is only part of what is required. Teachers must be able to teach these children; furthermore, proper programming is crucial to the learning disabled child's success. A major hinderance to a logical teaching approach has been the absence of a tested theory of instruction particularly directed towards the learning disabled child. Such a theory does not prescribe specifics; rather, it provides a general description of the conditions necessary for successful learning to take place. A theory of instruction is independent of specific materials, techniques, methods or approaches to instruction. Furthermore, the

theory should apply widely to different types of learning tasks and contexts, and to a wide range of individual differences. The controversy over proper programming continues with divergent views and opinions often argued on the basis of seeming logic, personal intuition, past experience or a predilection towards a particular educational arrangement. A tested theory of instruction could finally provide a logical and consistent method of evaluating suitable educational alternatives for the learning disabled child.

## CHAPTER II

## REVIEW OF RELEVANT LITERATURE

This review considered several issues regarding exceptional children, the population of which will be limited to the Educable Mentally Retarded (EMR), Emotionally Disturbed and the Learning Disabled. The effects of special and regular class placement of exceptional children on self concept and academic achievement were investigated. Also examined were the teacher's ability to identify the exceptional child and the attitudes of teachers toward such children.

*Effects of Special Class Placement on Self Concept*

Pertinent literature dealing with the question of whether EMR children should receive their basic education in regular or special class was reviewed comprehensively by Cegelka and Tyler (1970). Results were presented for both regular class and special class placement of EMR children for enhancement of self concepts. This review presented over twenty major studies conducted up to 1970, with mixed results. Cegalka and Tyler discussed the difficulties encountered when attempting this type of research and concluded:

. . . that the entire status of the research of social and emotional adjustment of EMR children among normals continues to be unsettled. (p. 57)

Warner, Thrapp and Walsh (1973) identified 369 learning disabled, EMR and emotionally disturbed children ages 8.9 to 17.6. The authors attempted to determine the attitudes of these children toward their special class placement. An important aspect of this study was not adequately described, namely, which attitude scale was used, possibly lessening confidence in their findings. However, the authors concluded:

The findings of this study do not support the assumption that most special class children resent their special class placement with accompanying feeling of rejection and stigmatization. Special class is a generally stimulating and comfortable placement for children who had difficulty in adjusting to other placements within the educational setting. (p. 363)

Other studies had given additional support to the position that special class placement may enhance the self concepts of EMR students (cf., e.g. Goodman, Gottlieb, & Harrison, 1972; Schurr, Towne, & Joiner, 1972; Gottlieb & Budoff, 1973).

Learning disabled and emotionally disturbed children also are included in the population of exceptional children. Many of these children have remained in regular classes and research is available on their self concepts and peer popularity.

Bryan (1974) studied the peer popularity of learning disabled children in regular classes. She administered a peer-choice inventory designed by Moreno (1960) and the Guess Who Technique designed by Garry (1963) as sociometric rating scales. A total of 62 third, fourth, and fifth grade classrooms were involved in the study. Each classroom had at least one learning disabled child. The results indicated that learning disabled children were significantly less popular and more often rejected than randomly selected children. Bryan (1976) had these initial findings confirmed in a follow-up study, even though most of the children had been transferred to new classes with new teachers. This study suggested that low classroom status may be maintained across classroom groups.

Bruininks (1978) identified learning disabled children in mainstream programs in order to determine their social acceptance by non-disabled peers. Her findings showed the learning disabled child was significantly less socially accepted than his non-disabled peers. In addition, she found such students were less accurate than their classmates in assessing their own status in the group. The author noted if learning disabled students, in mainstream programs, did not perceive their poor status in the classroom they may not see a need to alter their interactions with peers in order to achieve more positive relationships.

Ribner (1978) identified 613 learning disabled and behaviorally difficult children eligible for placement in New York City Board of Education special classes. He administered a 20 item self-concept questionnaire made up of two parts, one on "school adequacy" and the other on "general competency". Children placed in special classes had a more positive self-concept with regards to school adequacy than did similarly handicapped children in regular classes. The children from special classes did not have a lower self-concept on general competence. Generally, the self-concepts of these learning disabled children were lower than those of normal children regardless of the questions. The author compared both special and regular class placement and concluded that the children whose self-concepts were most seriously affected by class placement were those who remained in regular class.

The research presented here attempted to review results as to the most advantageous placement of exceptional children for the enhancement of their self-concept. Although results are inconclusive, special classes seemed to enhance the self-concept of exceptional children more often than regular class placement. Dunn (1973), although generally opposed to segregated placements, made reference to this point:

. . . mildly retarded pupils in the regular grades, as a group, tend to be rejected and isolated by their more average peers. While the evidence is somewhat mixed on the adjustment of retardates in the sheltered environment of the special class, generally, it has been found to be superior to that of those left in regular grades. (p. 157)

Commenting on the same topic Kirk (1979) wrote:

Although studies are contradictory, the bulk of research evidence supports the thesis that children in special classes are better adjusted and have a better self-concept and less tension than the mentally retarded children remaining in regular grades. (p. 155)

However, academic performance must also be considered when one wishes to determine the efficacy of special class or regular class placement for the exceptional child.

#### *Effects of Special Class Placement on Achievement*

Cegelka and Tyler (1970) reviewed the research on academic achievement of EMR children in special classes and regular classes up to 1969. Their review described studies that favored EMR achievement in regular classes and others that showed no academic differences occurring between regular and special class placement. Only one study reviewed suggested that special class was superior academically, to regular class placement, for some EMR students. In this study, Goldstein, Moss and Jordan (1965) undertook a four year investigation of

1,938 first grade children, looking at the special-regular class issue in terms of intellectual gains, social adjustment, and academic achievement. In an effort to control for a major weakness in previous efficacy studies, the children were tested before entering the first grade and before failure experiences in school could be encountered. Only children with measured I.Q.'s of 85 and below were used as subjects. Random assignment was made to either newly created special classes or regular classes. In contrast to other studies, a consistent curriculum for the special class subjects was used throughout the four-year project along with the employment and supervision of specially trained teachers. The results of this study did not demonstrate greater benefits for either special or regular class placement; i.e., no significant differences appeared in academic achievement. At the end of two years, the controls (regular class) showed superior reading skills but this difference disappeared by the end of the fourth year. There was a tendency, however, for the low I.Q. special class children (I.Q. 50-65) to score higher than controls on arithmetic achievement, on several language tests and on a Test of Basic Information.

Eubanks (1969) matched 80 slow learning special class students and 80 slow learning regular class students with intelligence quotients ranging from 75-89 in grades three,

four and five. He used the Wide Range Achievement Test (WRAT), the Stanford Reading Test and a social scale of his own making. From his one year investigation, the author concluded that elementary school students of low average mental ability achieved significantly more in academic work, classroom behavior, and social class standing when placed in classes specifically designed for their needs and ability than did similarly identified children in regular classrooms.

Haring and Krug (1975) compared 48 EMR special class students with 48 EMR regular class students. The intelligence quotients for both groups ranged from 70-83. The study was conducted over an eight month period with pre- and post-test measures of the WRAT for reading, spelling, and arithmetic being administered. The DISTAR reading, spelling and arithmetic materials were used for instruction of the experimental group. The authors found significant differences in all academic areas tested, favoring special class placement. Haring and Krug concluded:

Special education is well along the road to mainstreaming but this change has come about because of individual commitment, intuition, a general desire for something new, and nearly everything else needed to bring about effective change except for hard data.  
(p. 277)

Vaac (1968), using WRAT scores, matched 17 emotionally disturbed special class students in spelling, reading, and arithmetic levels with 17 emotionally disturbed controls in regular class placement. He used a social scale of his own design to determine self-concept and social acceptance of all his subjects. At the end of this one year study Vaac found significant differences in self-concept and social acceptance favoring special class placement and significant differences in all academic areas, again favoring special class placement. He concluded that special classes for the emotionally disturbed child produced significant academic and social gains.

Five years later, Vaac (1972) reviewed the academic status of his subjects. At that time, he found the gains had not continued and concluded that special classes did not result in long term changes for emotionally disturbed children when they later were integrated into regular classes. The author, on the basis of this study, seriously questioned the effectiveness of special classes. However, definite weaknesses appeared in the second study. Vaac was able to locate only five of his original seventeen experimental students. Four were still in special classes, seven had moved away, and one had been placed in an EMR class. His conclusions, then, were based on less than one-third of his original sample. It was not clear whom

he had compared his students with and how many of his control subjects were located. Vaac, himself, suggested that the results are tenuous; nevertheless, he stated that special class placement was ineffective.

Cantrell and Cantrell (1976) reported the effects of mainstreaming on first graders in twenty schools in Tennessee. Two elementary experimental schools and two elementary control schools from each of five districts in Tennessee participated in the project. In the experimental schools the first-grade teachers had trained support teachers working with any child about whom a teacher was concerned. Children referred for help went through a systematic analysis of their needs, and a specific program was planned for them. Children with a variety of specific handicaps (intellectual, perceptual, physical, emotional) were included in the program.

The results of achievement tests given to both sets of students revealed significantly greater achievement gains for the exceptional child in the regular program at all levels of intellectual functioning. These results suggested that mainstreaming at the primary grades may be effective if properly trained support personnel are available.

Kaufman, Agard and Semmel (1978) reported results for children in the third to fifth grade range in mainstream programs. In their Texas study, one of the largest conducted

on the subject, 356 EMR students were placed in a regular class program with special professional help. They were compared with the same number of normal peers who were their classmates and with 273 retarded children who remained in special class programs. Data was collected on a wide variety of achievement, social-behavior, and learner-behavior characteristics. Over 400 teachers were involved in this project.

The results indicated that the mainstreamed retarded youngsters did not learn significantly more than those retarded students who remained in special classes. In addition, teachers rated them lower than the non-mainstreamed children on characteristics of social and personal behaviors, such as expressiveness and outgoingness. Furthermore, they participated in fewer interactions with their teachers.

This review attempted to determine whether a clear direction existed regarding academic achievement of exceptional children in regular or special classes. Results of class placement for enhancement of self concepts regarding exceptional children were mixed but seemed to favor special class placement; however, academic achievement, although again mixed, seemed to favor regular class placement. Dunn (1973) commented on the research of EMR students and special class placement for achievement:

As a group retarded pupils retained in regular grades make as much or more progress in school achievement as special class retardates but this is slightly less true for adolescents. (pp. 156-157)

He further commented on the type of research which resulted from these efficacy studies:

There are some who justifiably would ignore this accumulation of a half century of research findings because of the weakness of these field studies which have included (1) selection factors, with the more troublesome pupils referred for special class placement; (2) insensitive measures of pupil progress; (3) few follow-ups into later years; (4) small sample sizes; (5) short treatment periods; and (6) little control of teacher, curriculum or method variables. (pp. 157-158)

An important factor overlooked by Dunn was the assumption, by the researchers, of identical goals and objectives in the regular and special classes. Regular classes are academically oriented and bound by a standardized curriculum; whereas, special classes may not have such an academic orientation. Special classes for EMR students may emphasize social goals as their primary objectives. Blatt (1972) alluded to this discrepancy:

Special education has sought to subordinate typical curricula goals to the objectives of social growth and interpersonal relationships; nevertheless, educational researchers have continued to study academic attitude and school achievement. (p. 147)

If special class teachers resolved to teach primarily social skills, the choice of achievement testing before and after placement would be misleading if not irrelevant.

Mainstream programs using resource personnel have not produced the results predicted by advocates of such programs. Particular elements of successful programs have not been isolated, indicating that no simple solution exists for overall effective programming for exceptional children.

Finally, the majority of special class research effectiveness revolved around the EMR child. Other groups of children, however, are placed in special classes such as the emotionally disturbed and the learning disabled. Generalizations about special class effectiveness for these children cannot be made on the basis of studies for EMR children. Until a more uniform method of establishing effectiveness of class placement can be determined the question of placement for the exceptional child should remain inconclusive.

#### *Teacher Identification of Exceptional Children*

Recognizing the inconclusiveness of the research, regarding class placement for exceptional children, two further important issues will be considered. One, how successful are teachers at identifying those children who will experience difficulty in their classroom? The other, what are the attitudes of teachers towards exceptional children placed in their classroom?

Kindergarten and primary teachers are a reliable source of early identification of the child likely to experience learning difficulties (Feriden, Jacobson & Linden, 1970; Keough & Smith, 1970; Keough, Tchir, & Windeguth-Behn, 1974). Analysis of referral patterns of children for psychoeducational evaluation and possible placement in special education programs showed that referrals usually had been initiated by classroom teachers (Nicholson, 1967; Robins, Mercer & Myers, 1967; Hansen, 1970; and Keough, 1972). The teacher's key position in identification of pupil problems is of primary importance, since without this cognizance it is unlikely that a given child will be provided special educational services. The importance of early recognition of children with potential school problems places an additional responsibility on classroom teachers in the kindergarten and primary grades since teachers are being asked to identify problems before they are well developed. The teacher's day-to-day experience with a variety of behaviors gives an unparalleled perspective for appraising appropriate and inappropriate behaviors. Teachers' attitudes toward high risk children and their own feelings of competence in providing adequate educational experiences should also be considered.

*Teacher Attitudes Towards Exceptional Children*

Bargrover (1971) interviewed 50 educators using one question, "Would the exceptional child be better served by being returned to the more heterogeneous grouping of the regular classroom?" The responses are shown in the following summary:

	<u>Yes</u>	<u>No</u>
Regular class teachers	4	12
Special class teachers	5	8
School administrators	7	7
School psychologists	7	0

From the actual teaching personnel almost two-thirds wished to retain special classes. The author of the survey observed:

Classroom teachers more often favor retention of special classes while nonteaching educators prefer integration of the exceptional child.  
(p. 755)

Shaw (1971) interviewed 70 primary and intermediate teachers from a Minnesota school district. The teachers completed an attitude survey and then two specifically trained observers recorded the interactions of the teachers with their classes. The analysis of teacher attitudes toward the retarded child, learning disabled, and average child indicated a significant difference in favor of the average child. The author cautioned that his conclusions

were tentative, but stated that regular classroom teachers had more favorable attitudes toward average children than toward retarded or learning disabled children. Further, these attitudes did not differ between primary and intermediate teachers.

Shotel, Iano, and McGettigan (1972) interviewed and observed 128 teachers, from New York State, on their attitudes toward the integrated handicapped child. From their investigation the authors concluded:

The unanimity among the teachers in this study concerning the need for special methods and materials may represent an obstacle to the integration of handicapped children. If regular class teachers believe they cannot reach exceptional children without an array of special methods and materials then it is indeed unrealistic to expect them to accept with confidence, major responsibility for teaching these children. In this study integrating handicapped children into regular classes with supportive services provided by resource room personnel had slight, if any, effect on teacher attitudes toward EMR and learning disabled children and only moderate effect on teachers' attitudes towards emotionally disturbed children. It remains an open question whether or not, at the elementary school level, programs providing increased integration of handicapped children can be successful in schools using the conventional grade organization pattern.  
(p. 682)

Stefano, Gestin and Cowen (1977) had 134 primary grade teachers and 96 mental health workers rate nine hypothetical referrals depicting three predominant types of school

adjustment. These behaviors were acting out, shy-anxious, and learning difficulties. The study's major findings can be summarized as follows: teachers had significantly more concerns about the treatability and prognosis of young children than did the mental health workers. For all the problem children, the mental health professionals had more positive views than teachers about the appropriateness of referral, the ease and enjoyability of working with such children, and their prognostic outcomes.

Reynolds and Birch (1977) reported on the attitudes of teachers' associations and teachers' unions regarding mainstreaming. They reported that some teacher organizations requested (1) a moratorium on mainstreaming and a return to programs of self-contained special classes; or (2) a reduction in the size of the class by five children for every handicapped child assigned to the regular grades.

Attitudes of teachers towards the placement of exceptional children in regular classrooms, based on research reviewed here, were not encouraging. This is not to say all teachers demonstrate poor attitudes or that no teachers could cope with the extra demands of exceptional children placed in their classrooms. However, most exceptional children require special programming placing further strain on teachers to say nothing of new and wider curricula teachers are expected to implement for their regular

students. Many classroom teachers have little or no training in specialized methods for dealing with exceptional children. Support services vary from school to school and district to district, depending upon teaching expertise, commitment, and financial resources. School populations today are generally declining and in the light of present school financing, expectations of increased financial sources for support staffing is probably unrealistic. As integrated programs increase, the exceptional child may feel only frustration and rejection in many regular classrooms because of teacher attitudes.

In conclusion, this review attempted to examine four pertinent issues regarding class placement for exceptional children. Firstly, the issue of self-concept enhancement in regular or special class placement was examined. Cegelka and Tyler (1970) reviewed over twenty major studies with mixed results. Research was presented from Warner et al (1973), Bryan (1974), Bruininks (1978) and Ribner (1978) to suggest special class placement enhanced the self concepts of exceptional children more than did regular class placement. Dunn (1973) and Kirk (1979) concluded, although the results of different studies were mixed, that special class placement enhanced the self concept of retardates better than did regular class placement. Secondly, the issue of academic achievement and class placement was

examined. Cegelka and Tyler (1970) examined over twenty major studies and found only one, by Goldstein, Moss and Jordan (1965), that tended to support special class placement; however, all other studies reviewed either showed no differences or supported regular class placement. Studies were presented by Vaac (1968), Eubanks (1969) and Haring and Krug (1975) that concluded special class placement was academically advantageous for exceptional children. Dunn (1973) expressed a belief that regular class placement for achievement was supported by the bulk of the research on EMR students; however, he listed six specific weaknesses in the field research. These acknowledged weaknesses combined with the assumption by the researchers of equal goals and objectives between regular and special class placements referred to by Elenbogen (1957) and Blatt (1972) tended to make the results less definite. Finally, most of the research regarding class placement for academic achievement centered on EMR students; therefore, generalizations to other populations of exceptional children were tenuous. Cantrell and Cantrell (1976) reported significant differences in academic achievement favoring mainstream programs; however, Kaufman, et al. (1978) failed to demonstrate any significant differences favoring mainstream programs over special class placement for exceptional children. Thirdly, the review examined how successful teachers are at identifying

exceptional children. Studies were presented by Nicholson (1967), Robins et al. (1967), Hansen (1968), Feriden et al. (1970), Keough and Smith (1970) and Keough, et al. (1974) to support the position that teachers are reliable in identifying exceptional children in their classes. This result was not surprising because of the teachers daily contact with many children who exhibit a variety of classroom behaviors. Fourthly, the review examined the attitudes of teachers towards exceptional children. Teachers' attitudes toward exceptional children were not encouraging based on research reviewed here by Bargrover (1971), Shaw (1971), Shotel, et al. (1972), Reynolds and Birch (1977) and Stefano, et al. (1977). Integrated programs anticipated that teachers would be willing and enthusiastic towards exceptional children being placed in their classes, but these studies did not support that assumption. Without massive re-education of teachers, particularly their attitudes towards exceptional children, such integrated programs will have only limited success. Finally, it is not the intention here to suggest a return to special class placement as the only alternative for exceptional children. Rather, it is to caution against the elimination of an educational alternative, namely special classes. Research to date is inconclusive suggesting that the question of placement is perhaps more complex than

previously realized. Research seems to suggest special education should become more flexible in providing alternatives for exceptional children and recognizing individual differences amongst students instead of searching for a single panacea regarding the placement issue.

### CHAPTER III

#### DESIGN AND PROCEDURES

##### *Theoretical Orientation*

Different professions, using differing terminology to describe what educators call learning disabilities, have become proficient at identifying and diagnosing learning disabled children. The medical and neurological report may describe immature physical development, questionable electroencephalographic wave patterns, minimal cerebral dysfunction or specific dyslexia. Psychiatric diagnostic terminology often reflects an adherence to psychoanalytic theory. Terms such as "ego deficit" and "transference relationships" may appear in the case study and be of educational significance in direct relationship to the teacher's sophistication with psychoanalytic theory. Clinical psychologists base their observations of the child on psychological test findings. A standardized intelligence test may reveal that a child's "verbal" functioning is superior to his "performance" level. Perceptual motor testing may be given to discriminate spatial orientation and the number of "collisions" reported. Case studies prepared for the school by consultants in

medicine, psychiatry, social work, and clinical psychology may be elaborate and comprehensive in areas such as physical development, personality assessment, family background, intelligence and academic performance, but sparse or non-existent in the area of implication for classroom instruction. This is not to say the assessments are inaccurate or irrelevant but seldom does descriptive diagnosis have practical classroom application.

Special education exists because some children present problems which have not been solved by general education. The learning disabled child, in fact most exceptional children, have been unable to satisfactorily cope with standard school curriculums; furthermore, they may be labeled slow or lazy when in reality they are neither. The labels have an adverse effect on future learning, on self-perception, and on feelings of personal worth. Many children who experience continual educational failure suffer from some degree of concomitant emotional disturbance. The well adjusted failing child is difficult to find. Special education often has stressed the handicaps, disabilities, and limitations of these children but has lacked a clear theoretical direction towards remediation (based on learning principles). A more consistent and logical methodology for educating these children is required. This methodology may depend more on the skillful arrangement of the

environment, to produce more efficient learning, than preoccupation with a particular child's disability. Teaching is the critical ingredient that will result in efficient or inefficient learning; moreover, a theory of instruction, based on conditions for learning, can be a major factor in effective learning taking place in the classroom.

Many authors have contributed valuable information about learning principles to help teachers organize their instruction more effectively. Individually, these contributions are inadequate but by collectively synthesizing them, conditions necessary for effective learning become apparent. Thorndike (1906) observed that behavior which was rewarded tended to be repeated. That observation was refined by Watson (1925) and Pavlov (1927) into a theory of classical conditioning, the latter researchers defining the important parameters of stimulus-response-reward contingencies. Skinner (1968) returned to an emphasis on the Thorndikian "operant conditioning" model and distinguished between two types of learning, one in which behavior was elicited by stimuli and the second in which behaviors were emitted by the organism and then shaped by the contingencies of reward and punishment. Carroll (1963) felt if learners were allowed the time needed and attended to the task while practicing, they could be expected to obtain the levels of achievement set. Bloom (1956) established the mastery model based on

objectives, first put forward by Washburne (1922) and Morrison (1926). Gagne (1965) contributed his analysis of different types of learning, ranging hierarchically from simple to complex. From these contributions Galloway (1976) deduced some general rules and a theory of instruction:

1. Preferably through task analysis, the prerequisites for a learning task must be determined.
2. Based on the task analysis, objectives for the task must be clearly and precisely stated.
3. To supply motivation to maintain learning efforts, reinforcement for the learner's successful behavior must be provided.
4. ~~In~~ order to learn, the learner must pay attention to the task.
5. For learning to take place, adequate and meaningful practice must be given.
6. In order that the learner may correct errors, corrective feedback must be given.

Theoretically, if a teacher can arrange these conditions for the learner, learning should take place. If such a program could be established, the educational needs of the learning disabled child could be evaluated in a more efficient and productive manner.

### *Purpose of the Investigation*

The purpose of this investigation was to explicate, implement and initially test a theory of instruction as proposed by Galloway in his book *Psychology of Learning and Teaching* (1976). A possible application for a theory of instruction was that it could become a tool for helping in the assessment of various instructional practices such as mainstreaming programs and special classes. This investigation examined whether the conditions for learning, as proposed by Galloway, could be vigorously applied in special classes for the LD child as against application in regular classes. The investigation attempted to suggest special class placement as an alternative for some learning disabled children. Special classes because of their class size, aides, trained teachers, and special materials could be contributing factors to teachers' success in arranging the conditions for learning.

This investigation was not concerned with determining whether certain conditions or their combinations were more responsible for gains in learning than others, or in the parallel question of which, if any, of the conditions of learning were more appropriate or largely responsible for any substantial gain in learning. Answers to these questions need to wait for further study.

### *Hypotheses*

The following hypotheses were tested in this investigation:

1. Following treatment, there will be a significant advantage for the experimental group on the *Gates-MacGinitie Vocabulary Test*.
2. Following treatment, there will be a significant advantage for the experimental group on the *Gates-MacGinitie Comprehension Test*.
3. Following treatment, there will be a significant advantage for the experimental group on the *Jastak Wide Range Achievement Test of Reading*.
4. Following treatment, there will be a significant advantage for the experimental group on the *Jastak Wide Range Achievement Test of Spelling*.

### *Procedure*

*Subjects.* Two groups of elementary school children were involved in this study. The experimental group had 24 students. One primary level Learning Disabled class and one intermediate Learning Disabled class, both from Victoria West Elementary School, participated. The control group had 24 similarly disabled students enrolled in regular classes in three Victoria Elementary Schools.

Subjects came from similar socioeconomic backgrounds and were matched for: age, sex, intelligence, word attack skills, spelling, vocabulary, and reading comprehension. The subjects ranged in age from 7.5 to 12.0 years.

*Teachers.* In any study on education, perhaps the most difficult, important, and often disregarded facet is the teacher variable. The two experimental group teachers both had undergraduate degrees with particular training in special education. The control group had ten classroom teachers with three holding Masters degrees, four with undergraduate degrees and three working towards their degrees. Three Learning Assistance teachers, one with a Masters degree and two with undergraduate degrees, took part in the investigation. The experimental teachers had six years and eight years teaching experience, respectively. The regular classroom teachers had an average of 14 years experience with no classroom teacher having less than five years experience; furthermore, the Learning Assistance teachers had an average of 18 years teaching experience. No children were selected from teaching situations that were deemed unsatisfactory by the investigator and/or the school principal. In conversation with the investigator, all teachers were aware of the Galloway conditions for learning; four of the control group teachers had taken university course work that included this content from Galloway.

*Pre-testing of Experimental Group.* The experimental group for this investigation was administered the Gates-MacGinitie reading comprehension and vocabulary tests B form 1, C form 1 or form D1M, depending on grade level. Each subject received the Wide Range Achievement Test (WRAT) reading and spelling sections. The reading section of the WRAT measured the word attack skills of the students for this investigation. Finally, each student received the Slosson Short Form Intelligence Test (SIT). This testing of the experimental group was completed by late September.

*Pre-testing of Control Group.* In mid-September, all students from the three control group schools were administered the Gates-MacGinitie Reading tests of comprehension and vocabulary forms B1, C1, or D1M, depending on grade level and the WRAT spelling test. At the conclusion of the testing period, approximately 1100 scores for vocabulary, comprehension and spelling were available. The author then matched, as nearly as possible, all experimental subjects with control subjects. A large number of control subjects was available; therefore, three controls for each experimental subject were selected. The closest match was preselected as first choice, second closest match as second choice, and third closest match as third choice. This was done in order to reduce attrition from the control group. Finally, all control students chosen

were administered the WRAT word attack test and the SIT to conclude all pre-testing at the end of September.

*Post-testing.* In late May, all subjects were post-tested on the Gates-MacGinitie reading and comprehension tests form B1, C1, or D1M, depending on grade level, and the WRAT reading and spelling tests.

Between September and May, all children in the control group received learning assistance and were removed from their classes from 3-5 days per week for approximately forty minutes. The experimental group received no help from a learning assistance teacher and remained in their self-contained classes. An aide was present in each special class and worked under the direction of the teacher.

### *Statistical Analysis*

The study had to deal with pre-existing groups; therefore, analysis of covariance was used as the statistical procedure, the covariant being the pre-test scores. The level of confidence established for each hypothesis was  $p < .05$ .

### *The Measuring Instruments*

*The Wide Range Achievement Test (WRAT).* The Wide Range Achievement Test (WRAT), used as a tool to study the basic school subjects of reading word recognition and

pronunciation, written spelling and arithmetic computation, was first standardized in 1936, and has undergone four revisions by the authors.

Each test was divided into two levels, I and II. Level I was designed for use with children between the ages of 5 years and 11 years 11 months. Level II was intended for persons from 12 years to adulthood. In this investigation two subtests were used, reading and spelling.

The Level I reading test was administered to all subjects in this investigation. This section included: naming two letters in a previously written or printed name, identifying 10 letters by form, naming 13 letters of the alphabet, and at the reading level, pronouncing up to 75 words. A time limit of 10 seconds per word was adhered to and the test was terminated after 12 consecutive failures. Correct responses were tallied and the grade equivalent located in the table provided.

The Level I spelling test was administered to all subjects in this investigation. This test included copying 18 symbols printed on the first page of the test blank, printing or writing the subjects name, and writing up to 45 words of dictation. A time limit of 15 seconds per word was adhered to and the test was terminated after 10 consecutive errors. Correct responses were tallied and the grade equivalent located in the table provided.

The WRAT was selected for use in this investigation because of its wide use within the Victoria School District. Finally, this test was selected because of its wide use in special education research cf. e.g., Vaac (1968), Eubanks (1969), and Haring and Krug (1975).

*The Gates-MacGinitie Reading Tests.* All students who participated in this study were administered, in a test/retest format, either form B1, C1 or D1M depending upon their age and grade placement. The test/retest reliability of these tests ranges from .78-.89 as reported in the manual.

*The Gates-MacGinitie Reading Tests* were considered appropriate for this investigation because of their wide use within the Victoria School District; furthermore, these tests were selected for a three year study of school performance by the Greater Victoria School Board. A more complete description of the test's content and administration procedures may be found in Appendix A.

*The Slosson Intelligence Test (SIT)* was administered to all students in this investigation. This test was made for the use of teachers, principals, psychometrists, psychologists, counsellors, social workers and school nurses who, in their work, often need to evaluate an individual's intelligence. Many items on the SIT had been adapted from the Stanford-Binet, Form L-M. Students

responded to items dealing with drawing of geometric figures, similarities and differences, auditory memory, vocabulary, history, and arithmetic. Encouragement could be given by the tester to the testee. Further, the tester, at his/her discretion, could revert back to an easier item to restore confidence if the testee seemed to becoming frustrated. Students responded to questions and were either correct or incorrect. Once ten consecutive errors were made the test was terminated. Correct responses were totalled, on the form accompanying the manual, and the intelligence quotient calculated.

The manual reported a study of 139 people aged 4 to 50 years on a two month test/retest format. A test/retest reliability correlation of .97 was recorded.

From the Seventh Mental Measurement Yearbook (Buros), Himelstein reported:

The SIT appears to be a valuable quick screening device. Since inexperienced testers can administer this instrument quickly and accurately it has much to recommend it as a preliminary screening procedure. (p. 425)

In his review, Himelstein reported Jongeward had correlations of SIT and Stanford-Binet I.Q. scores of .76 and .81. De Lapa, from Himelstein's review, reported correlations between SIT and Stanford-Binet for both educable retardates and regular class students. For the retardates, the obtained

correlation was .60 raised to .79 when corrected for restriction of range. For the regular classroom students, the correlation was .90.

Meissler (1970) used the SIT for comparison of 200 atypical children on the Wechsler Intelligence Scale for Children (WISC). He reported a correlation of .81 between the two tests and felt the SIT could be of great value in identifying such children.

The SIT was decided upon for this investigation instead of the WISC because the latter test was not to be used as an indicator of a learning disability.

#### *Definition of Terms*

1. Mainstreaming - the temporal, instructional and social integration of eligible exceptional children with normal peers. It is based on an ongoing individually-determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional and supportive personnel. (Kaufman et al, 1975)
2. Special Class - a class of 15 or fewer students who might be mentally retarded, learning disabled, or emotionally disturbed.

3. Learning Assistance Teacher - a specifically trained teacher who assists the regular class teacher by taking small groups of children (three to six per group) for intensive instruction for a prescribed period each day.
4. Mentally Retarded Child - any child who scores below 75 on a recognized intelligence test such as the Wechsler Intelligence Test for Children.
5. Emotionally Disturbed Child - any child who exhibits socially deviant behavior to the point that it impairs his/her learning in the regular classroom or seriously interferes with the learning of other students in the classroom.
6. The Learning Disabled Child - any child of average intelligence without sensory loss or gross motor defects whose school achievement is one to one and a half years below his chronological age and grade placement for two or more subject areas in primary grades, and two years or more below his chronological age and grade placement for the intermediate grades in two subjects or more as measured by standardized school tests.

*Limitations of the Study.* Limitations are inherent in most educational investigations. Below are listed some major limitations to this study. It took place in a

public school system and was subject to limitations of such settings.

1. The subjects of the investigation were not randomly assigned to control or experimental groups.
2. The subjects of this investigation came from the Greater Victoria School District. It cannot be assumed that they are a representative sample of all children identified, by other school districts, as learning disabled. Therefore, the generality of the findings may be limited.
3. The comparison of performance of children grouped in special classes (implying a number of subjects grouped with a single teacher) and others distributed into regular classes (implying single subjects working with their individual teachers) posed a problem in equating teacher effectiveness that inheres in any single-phase study of this kind. That is, it is impossible for both the special class subjects and the regular class subjects to be taught by the same teachers.

#### METHOD

##### *General Considerations*

This investigation involved two distinctly different approaches to meeting the reading and spelling needs of

learning disabled children. The selection of the programs was influenced by an experimental-control treatment design, with the experimental group being the special class students and the control group being "mainstreamed" students in regular class. The investigation was interested in ascertaining whether special class placement was academically significant, for learning disabled children, because of rigid adherence to a theory of instruction as proposed by Galloway (1976). School subjects chosen to be explored were reading comprehension, vocabulary development, decoding skills, and spelling.

#### *Experimental Group*

Both experimental groups had classrooms in the same school. Students received all instruction in their respective classrooms. Children usually worked in small groups or individually. The experimental teachers had six and eight years teaching experience respectively, with undergraduate degrees and training in special education procedures. An aide was present in each class from 9:00 a.m. to 12:00 p.m. daily and worked under the direction of the teacher. The role of the aide was to assist the teacher and work with individual or small groups of children. Initially, aides spent time making materials, marking work, or listening to children read. As they learned class

procedures, aides became more involved in working with individuals and small groups under the supervision of the teachers; furthermore, individual lesson plans for aides were made daily by the teacher and reviewed before class. This procedure allowed for smooth transition of lessons, materials, and methods.

In the experimental group the "conditions for learning" were incorporated. Conditions for learning were requirements that must be met, according to Galloway (1976), if learning is to occur. These conditions for learning were:

1. diagnosis;
2. clear objectives;
3. reinforcement;
4. attention to the task;
5. adequate practice;
6. knowledge of results.

The following is a description of how these conditions for learning were arranged in the experimental group.

#### *Diagnosis For Reading*

The diagnosis focused on particular strengths and weaknesses in the student's independent, instructional, frustration and capacity reading levels as defined by Zintz (1972). The *independent reading level* was the highest level at which the child could read fluently, making no more

than one error in 100 words, and with no difficulties in comprehension. The *instructional level* of reading, the most important because it was the teaching level, was the highest level at which the child made no more than five errors in 100 running words with at least 75 per cent comprehension. The *frustration level* was the level at which obvious difficulties caused confusion, frustration, and tension in the reading situation. The *capacity level* for reading was the highest level at which the child could understand the ideas and concepts in informational material that was read to him. Individual levels for each child were assembled from the diagnostic information, combining a sight-vocabulary check, phonics skills checklist, graded word test, spelling test and an informal reading inventory (IRI).

*The Dolch Basic Sight Words* (1942). This word list consisted of the most frequently appearing words in all reading and writing - making up over half of all the running words children read in their elementary textbooks (Zintz, 1972). The words were divided into five separate lists: pre-primer, primer, first grade, second grade, and third grade. Word cards were flashed to students and responses recorded; 90 per cent accuracy on each list was considered mastery.

*Spelling Test.* Each student was given Form A of the *Schonell Graded Spelling Test* (1957). Students wrote the words from dictation and the test was terminated after ten consecutive errors. Correct responses were divided by ten to give a grade score.

*The Graded Word Test.* Each student was given a 9x12 copy of the words from the *Schonell Graded Word List* (1957); meanwhile, the teacher had a duplicate stencilled copy to record responses. When the student made ten consecutive errors, the test was terminated, and correct responses divided by ten giving a grade score.

*The Informal Reading Inventory (IRI).* The IRI offered a simple and accurate method of determining a student's oral, silent, and listening reading levels. The *Lyons-Carnahan IRI* was used in this investigation. A more complete description of the IRI may be found in Appendix B. Diagnostically, the IRI provided each student's independent, instructional, frustration and capacity level. An example of combining all diagnostic information for a student, Brad, can be found in Appendix B.

### *Objectives*

For each student in the experimental group of this investigation, long range goals and specific objectives were written. An example of one student's objectives may

be found in Appendix C. The objectives written for the student were based on information obtained from the diagnosis section.

### *Reinforcement*

Reinforcement is a procedure through which a given behavior is maintained. Teachers can affect the accuracy, efficiency, rate and probability of student performance by providing rewarding conditions in the classroom (Galloway, 1976). The form of reinforcement in both experimental groups was tokens. Tokens were exchanged weekly for swimming each Friday from 1 to 2 p.m. (October to May). Each token was worth 1 minute in the pool; therefore a student accumulating 46 tokens for the week had 46 minutes in the pool. Students earning more than 60 tokens in the week received full pool time but could not carry tokens over to the next week. Although swimming was the primary reinforcer, a strong secondary reinforcer was time off from school for swimming. Tokens were earned during group or individual instruction time, for completion of seatwork and the playing of academic games. A more complete description of how tokens were earned may be found in Appendix D.

### *Attention To The Task*

Children experiencing learning disabilities often have difficulty paying attention to the task (Viel, 1979). By using "every pupil response techniques" (EPRT) students were actively engaged in the learning process. Students listened carefully, an important school skill, and they manipulated objects to help sustain their attention. A more complete description of the EPRT used may be found in Appendix E.

### *Appropriate Practice*

Practice procedures were related to particular skill weakness in the form of review to maintain and reinforce learned skills. The experimental groups had daily practice sessions in all subject areas. A more complete description of the appropriate practice procedure used may be found in Appendix F.

### *Corrective Feedback*

Appropriate attending and responding behaviors were maintained by consequences which were made known to the learner through knowledge of results, or feedback. Attention guided responses and feedback gave information that enabled students to modify the next response to make

it more effective. A more complete description of how the corrective feedback was given students may be found in Appendix G.

### *The Control Group*

A decided advantage existed in using realistic school situations to investigate relationships between educational variables. Educational researchers wish to generalize research findings to real school situations and research conducted in an authentic school environment logically is more generalizable. However, it is often difficult for teachers and administrators to completely accede to the wishes of the researcher regarding the manipulation of students for experimental purposes. It may be impossible to move students from one curriculum to another or randomly assign students to groups in an effort to produce a tight research design. Control group subjects in this investigation received the majority of their instruction in the regular classroom; however, in addition, they received daily learning assistance in reading and/or spelling and arithmetic as deemed necessary by the individual school. The type of classroom instruction ranged from individualized programs to whole group instruction. Control group tests for diagnosis ranged from standardized tests to informal teacher made tests.

## CHAPTER IV

## RESULTS

The results of this investigation will be discussed with reference to the four hypotheses presented earlier (p. 40). Group means (in raw score units) for the tests appear in the tables. A series of analyses of covariance was done with these means comparing the subjects' post-test means with the appropriate pre-test as the covariate. Intelligence quotients for primary and intermediate groups are presented; in addition, the combined intelligence quotients of the groups are given. No significant differences in intelligence were found between the groups.

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TABLE 3: INTELLIGENCE QUOTIENTS OF PRIMARY CONTROL AND EXPERIMENTAL GROUPS

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	<u>N</u>	<u>M</u>	<u>SD</u>	<u>F</u>	<u>P</u>
Experimental	13	98.85	5.4		
Control	13	98.92	4.1		
				1.78	.33

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TABLE 4: INTELLIGENCE QUOTIENTS OF INTERMEDIATE CONTROL AND EXPERIMENTAL GROUPS

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	<u>N</u>	<u>M</u>	<u>SD</u>	<u>F</u>	<u>P</u>
Experimental	11	96.64	4.52		
Control	11	98.71	3.71		
				1.48	.57

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TABLE 5: COMBINED INTELLIGENCE QUOTIENTS OF PRIMARY AND INTERMEDIATE GROUPS

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	<u>N</u>	<u>M</u>	<u>SD</u>	<u>F</u>	<u>P</u>
Experimental	24	97.83	5.0		
Control	24	98.83	3.8		
				1.74	.20

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The first hypothesis stated that there would be significant differences between the control and experimental groups on the Gates-MacGinitie vocabulary post-test for primary and intermediate subjects. The results of the vocabulary data for primary groups are presented in Table 6

and for intermediate groups in Table 7. The results for primary students provided significant differences supporting the hypothesis ( $p < .01$ ); however, the differences between intermediate groups were not significant ( $p < .07$ ). The mean grade equivalent for the primary experimental group in vocabulary was 1.5 (converted from raw score units in Table 3) in September pre-testing and 3.1 in post-testing (total year gain 1.6 years). For the primary control group the mean grade equivalent for vocabulary was 1.6 in September pre-testing and 2.3 in post-testing (total year gain .7 years). The intermediate experimental subjects had a mean grade equivalent score of 3.5 in September pre-testing and a post-test mean grade equivalent of 4.5 (total year gain 1.0 years). The intermediate control group had a vocabulary pre-test mean grade equivalent score of 3.6 and a post-test mean grade equivalent score of 4.2 (total year gain .6 years).

TABLE 6: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (PRIMARY) ON GATES-MacGINITIE VOCABULARY RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experimental)	13	13.00	4.85	27.46	6.01	28.19
Group 2 (Control)	13	14.69	5.42	20.92	5.22	20.19
F			7.04	8.77		3.21
p			.41	.007		.00001***

\*p < .05

\*\*p < .01

\*\*\*p < .001

TABLE 7: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (INTERMEDIATE) ON GATES-MacGINITIE VOCABULARY RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experimental)	11	15.91	6.65	23.27	6.44	23.88
Group 2 (Control)	11	17.20	6.79	22.10	8.2	22.10
F		1.93		1.35		3.76
p		.67		.72		.07

\* p < .05

The second hypothesis stated that there would be significant differences between the control and experimental groups on the Gates-MacGinitie comprehension post-test for primary and intermediate subjects. The results regarding this hypothesis are presented in Tables 8 and 9. Both experimental groups produced significant advantages beyond .01 levels of confidence. The pre-test mean grade equivalent for the primary experimental group was 1.7 and the post-test mean for the group was 3.0 (total year gain 1.3 years). The pre-test mean grade equivalent for the primary control group was 1.8 and the post-test mean for this group was 2.4 (total years gain .6 years). The intermediate experimental group had a mean grade equivalent of 3.4 on the pre-test and 4.5 on the post-test (total year gain 1.1 years). The intermediate control group had a pre-test grade equivalent score of 3.3 and a post-test score of 3.9 (total year gain .6 years).

TABLE 8: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (PRIMARY) ON GATES-MacGINITIE READING COMPREHENSION RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experi- mental)	13	11.15	6.39	23.92	8.5	22.99
Group 2 (Control)	13	11.53	5.85	16.76	5.1	16.69
F		6.92		8.85		1.47
p		.41		.007		.0001***

\* p < .05  
 \*\* p < .01  
 \*\*\* p < .001

TABLE 9: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (INTERMEDIATE) ON GATES-MacGINITIE READING COMPREHENSION RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experi- mental)	11	18.18	7.74	27.72	7.6	27.41
Group 2 (Control)	11	17.29	5.80	22.10	4.8	22.44
F		8.58	4.01			8.54
P		.77	.06			.01**

\* p < .05  
 \*\* p < .01

The third hypothesis stated that there would be significant differences between the control and experimental groups on the Wide Range Achievement Test (WRAT) in reading post-test for primary and intermediate subjects. The results regarding this hypothesis are presented in Tables 10 and 11. The results showed significant advantages for the primary experimental group beyond the .05 level of confidence and beyond the .01 level for the intermediate group. The primary experimental group had a WRAT reading mean grade-equivalent pre-test score of 2.2 and a post-test score of 3.6 (total year gain 1.4 years). The primary control group had a mean pre-test score of 2.2 and a post-test score of 2.9 (total gain .7 years). The intermediate experimental group had a mean WRAT grade equivalent pre-test score of 3.5 and a post-test score of 5.5 (total year gain 2.0 years). The intermediate group had a mean pre-test score of 3.5 and a post-test score of 4.4 (total year gain .9 years).

TABLE 10: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (PRIMARY) ON WRAT READING RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experi- mental)	13	41.07	11.75	55.31	11.22	55.15
Group 2 (Control)	13	40.69	10.2	49.46	8.96	49.61
F		7.94		2.15		7.10
p		.93		.16		.02*

\*  $p < .05$

TABLE 11: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (INTERMEDIATE) ON WRAT READING RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experi- mental)	11	54.28	8.17	66.36	0.1	66.89
Group 2 (Control)	11	55.39	8.41	61.00	8.3	60.42
F		9.68		1.99		2.30
p		.76		.17		.0002***

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

The final hypothesis stated that there would be significant differences between the control and experimental groups on the WRAT in spelling post-test for primary and intermediate subjects. The results regarding the hypothesis are presented in Tables 12 and 13. Both experimental groups produced significant results beyond the .01 level of confidence. The primary experimental group had a WRAT spelling mean grade equivalent pre-test score of 2.0 and a post-test score of 3.0 (total year gain of 1.0 years). The primary control group had a WRAT spelling mean grade equivalent pre-test score of 2.0 and a post-test score of 2.7 (total year gain of .7 years). The intermediate experimental group had a WRAT spelling mean grade equivalent pre-test score of 2.9 and a post-test score of 4.7 (total year gain 1.8 years). The intermediate control group had a WRAT spelling mean grade equivalent pre-test score of 2.9 and a post-test score of 3.7 (total year gain .8 years).

TABLE 12: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL GROUPS (PRIMARY) ON WRAT SPELLING RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group 1 (Experimental)	13	27.31	6.1	34.54	4.33	34.40
Group 2 (Control)	13	26.92	5.44	31.54	4.75	31.67
F		2.92		2.83		1.36
p		.87		.11		.002**

\* p < .05

\*\* p < .01

TABLE 13: ANALYSES OF VARIANCE AND COVARIANCE COMPARING EXPERIMENTAL AND CONTROL OF GROUPS (INTERMEDIATE) ON WRAT SPELLING RAW SCORES

	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Mean
Group I (Experimental)	11	32.73	4.32	40.91	5.03	41.23
Group II (Control)	11	33.60	3.87	37.60	3.1	37.25
F		2.36		3.23		9.71
p		.64		.09		.006**

\* p < .05

\*\* p < .01

*CHAPTER V**DISCUSSION*

When the data from primary and intermediate groups were considered together, all of the experimental hypotheses in this investigation were accepted. However, when these groups were considered separately, an interaction between grade level and placement was evident in the vocabulary scores. The primary experimental group showed a significant advantage in vocabulary development ( $p < .01$ ); the intermediate group, non-significant differences ( $p < .07$ ). The results may be related to age as described by Spache and Spache (1973).

Intensive emphasis at primary grade levels pays dividends in increased sight and meaning vocabularies. In fact at early stages of development such training may appear to produce quite dramatic gains, insofar as these are measured by common vocabulary and reading tests. With older elementary school pupils and at secondary and collegiate levels intensive vocabulary programs show gains but usually of much less striking nature.  
(pp. 515-516)

The results of this investigation suggested that learning disabled students in special classes, implementing a theory of instruction proposed by Galloway, can make significant academic gains over similarly disabled students in regular classes. The experimental groups rigidly adhered

to Galloway's theory and daily incorporated his conditions for learning in their instruction. The results suggested that individual student needs in the experimental group were being met; furthermore, students experiencing particular skill difficulties could be identified and instruction adjusted to ensure further success. Even though Learning Assistance and regular class teachers worked with control group subjects daily, a particular strategy or instructional theory may not have been operating; therefore, individual needs of control group subjects may not have been met.

A consistent finding of this investigation was that, even with the help of Learning Assistance teachers, control group subjects on the average did not demonstrate a school year's progress in any of the test measures. The primary control group was consistent with gains of .7 months in vocabulary and WRAT reading and spelling and with .6 months in comprehension. The intermediate control group had gains of .6 in vocabulary and comprehension and gains of .9 and .8 in WRAT reading and spelling. An implied goal of special education for the learning disabled is to alter the curriculum or procedures in such a way that the child learns as well as his intelligence will permit. Since the definition of subjects of this study (page 13) included their being of average intelligence, it would

follow that the academic goal would be one year's improvement in grade equivalent scores over one school year. It is clear that, on the average, the experimental subjects accomplished this goal and that control subjects did not.

In attributing experimental group advantages to the particular effectiveness of the Galloway instructional model, the investigator was not unaware of other differences in treatment of the experimental and control group subjects. The possible contribution of such factors as class size and teacher training have been discussed and recognized as limitations. However, what is emphasized here is that learning disabled children taught in special classes by Galloway's theory showed gains that were not shown to occur simply from special class placement in the majority of studies as reviewed, for example, by Cegalka and Tyler (1970) in Chapter Two.

#### *Recommendations For Further Research*

Further research should test the Galloway theory of instruction in a variety of school settings. Research could be carried out on academic subjects other than those considered here (e.g. mathematics) and at various school levels. Further research could investigate the problems and effectiveness of applying similar methods to regular classes, particularly as it concerns learning disabled children in

those classes. Research involving special classes could include more groups to reduce the possible effect of the teacher variable. Finally, research into the length of time spent in special class that provide maximum benefit to students could enhance the entire state of knowledge in special education.

### *Conclusion*

This investigation has attempted to suggest a new theoretical direction in regard to instruction and research of learning disabled children. The results suggested that when Galloway's theory of instruction was rigidly applied, learning disabled subjects in special classes demonstrated significant academic gains over similarly disabled students in regular classes. A coherent theory of instruction, consistently applied, can help teachers in arranging effective instruction for their students. Most teachers and related professionals are competent at identifying, diagnosing and assessing learning disabilities; however, identification, diagnosis and assessment are only part of what is required to help children learn. Teachers must become more effective at structuring learning conditions for those children identified as learning disabled.

## BIBLIOGRAPHY

- Bargrover, E. A study of educators preference in special education programs. *Exceptional Children*, 1971, 37, 754-755.
- Blatt, B. Public policy and the education of children with special needs. *Exceptional Children*, 1972, 38, 537-545.
- Bloom, B.A. *Taxonomy of educational objectives handbook I: Cognitive domain*. New York: McKay, 1956.
- Bryan, J.A. An observational analysis of classroom behaviours of children with learning disabilities. *Journal of Learning Disabilities*, 1974, 7(1), 26-34.
- Peer popularity of learning disabled children - A replication. *Journal of Learning Disabilities*, 1976, 9, 307-311.
- Bruininks, V.L. "Actual and perceived status of learning disabled students in mainstream programs." *Journal of Special Education*, 1978, 12, 51-58.
- Buros, O.K. (ed.). *The seventh mental measurements yearbook*. Vol. I and II, Highland Park, New York. Gryphon Press, 1972.
- Canada, The commission on emotional and learning disorders in Children. *One million children - the celdic report*. Canada: Author, 1970.
- Cantrell, R.P., & Cantrell, M.L. Preventive mainstreaming: Impact of a supportive services program on pupils. *Exceptional Children*, 1976, 42, 381-386.
- Caroll, J.A. A model of school learning. *Teachers' College Record*. 1063, 64, 723-733.
- Cegelka, W.J., & Tyler, J.L. The efficacy of special class placement for the mentally retarded in proper perspective. *Training School Bulletin*, 1970, 67, 33-68.

- Declining enrolment and class sizes. British Columbia Teachers Federation Newsletter, May 1977, 1; 3.
- Division of Integrated and Supportive Services.  
*Guidelines: Special education programs 1977-78.*  
Ministry of Education, Victoria, British Columbia:  
Author, 1977.
- Dunn, L.M. *Exceptional children in the schools.* New York: Holt, Rinehart and Winston, Inc., 1973.
- Elenbogen, M.L. Comparative study of some aspects of academic and social adjustment of two groups of mentally retarded children in special classes and in regular grades (Doctoral dissertation, University of Florida, 1959). *Dissertation Abstracts International*, 1957, 17, 2496. (University Microfilms No. 16-37).
- Eubanks, L.L. A study of slow learning students in regular and specially designed classes (Doctoral dissertation, University of Oklahoma, 1969). *Dissertation Abstracts International*, 1969, 30, 1773-1744.
- Feriden, W.E., Jacobson, A., & Linden, N.J. "Early identification of learning disabilities." *Journal of Learning Disabilities*, 1970, 3, 589-593.
- Frierson, E.C. & Barbe, W.B. *Educating children with learning disabilities: Selected readings.* New York: Appleton-Century-Crofts, 1967.
- Gagne, R.M. *The conditions of learning.* New York: Holt, 1965.
- Galloway, C. *Psychology for learning and teaching.* New York: McGraw-Hill Book Co., 1976.
- Garry, D. *Guidance techniques for elementary teachers: The 'guess who' sociometric technique.* Columbus, Ohio: Merrill, 1963.
- Goldstein, H., Moss, J.W., & Jordan, L. *The efficacy of special class training on the development of mentally retarded children.* U.S. Office of Education, Cooperative Research Project Report No. 619, Urbana: University of Illinois, 1965.

- Gottlieb, J. and Budoff, M. "A Comparison of Educable E.M.R. Children in Special Classes With E.M.R. Children Who Have Been Reintegrated Into Regular Classes." *Studies in Learning Potential*, Vol. 3, No. 50, 1974.
- Guidelines: Special Education Programs 1977-1978 Division of Integrated and Supportive Services, Ministry of Education, Victoria, British Columbia, February 1977.
- Haring, N.G. and Bateman, B. *Teaching The Learning Disabled Child*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.
- Haring, N.G. and Krug, D.A. "Placement in Regular Programs: Procedures and Results." *Exceptional Children*, Vol. 41, No. 6, 1975.
- Jones, R.L. "Mainstreaming and the Minority Child." *Council for Exceptional Children*, Vol. 16, No. 2, 1976.
- Johnson, D.J. and Myklebust, H.R. *Learning Disabilities - Educational Principles and Practices*. New York: Grune and Stratton, 1968.
- Kaufman, M. Agard, J. and Semmel, M. *Mainstreaming: Learners and Their Environment*. Baltimore: University Park Press, 1978.
- Kaufman, M.J., Gottlieb, J., Agard, J.A., Kukic, M.B. "Mainstreaming: Toward An Explication of the Construct." *Focus on Exceptional Children*, Vol. 7, No. 3, 1975.
- Keough, B.K. *Programs for Educationally Handicapped and Educable Mentally Retarded Pupils: Review and Recommendations* (Technical Report SERP 1972-All). State Department of Education and University of California, Los Angeles, 1972.
- Keough, B.K., and Smith, C.E. "Early Identification of Educationally High-Potential and High Risk Children." *Journal of School Psychology*, Vol. 8, 1970.
- Keough, B.K., Tchir, C., and Windeguth-Behn, A. "Teachers' Perceptions of Educationally High Risk Children." *Journal of Learning Disabilities*, Vol. 7, No. 6, 1974.

- Kirk, S.A., & Gallagher, J.J. *Educating Exceptional Children*. Boston: Houghton Mifflin Co., 1979.
- MacMillan, D.L. & Semmel, M.I. Evaluation of mainstreaming programs, *Focus on Exceptional Children*, 1979, 9, 1-14.
- Meissler, G.R. A correlation of the Slosson Intelligence Test and the WISC when administered to atypical children (Doctoral dissertation, Catholic University of America, 1970). *Dissertation Abstracts International*, 1970, 31, 2191-A.
- Mercer, J. *Discussion of Alternative Value Frames for Classification of Exceptional Children*. Manuscript Prepared for the National Advisory Committee on Classification of Exceptional Children, 1972.
- Miller, W.H. *Reading diagnosis kit*. The Center for Applied Research in Education, Inc., New York, 1974.
- Moreno, J.L. *The sociometry reader*. Gencoe, Illinois: The Free Press, 1960.
- Morrison, H.C. *The practice of teaching in the secondary school*. Chicago: The University of Chicago Press, 1926.
- Myers, P.I., & Hammill, D.D. *Methods for learning disorders*. New York: John Wiley and Sons, Inc., 1969.
- Nicholson, C.A. A survey of referral problems in fifty-nine Ohio school districts. *Journal of School Psychology*, 1967, 5, 280-286.
- Pavlov, I.P. "Conditional reflexes: An investigation of the physiological activity of the cerebral cortex." In T. Shirley (Ed.) *Classics in Psychology*. New York: Appleton-Century-Crofts, 1978.
- Reynolds, M.C. & Birtch, J.W. *Teaching exceptional children in all America's schools*. Reston, Va: Council for Exceptional Children, 1977.
- Ribner, S. The effects of special class placement on the self-concept of exceptional children. *Journal of Learning Disabilities*, 1978, 2, 319-323.

- Robins, R.C., Mercer, J.R., & Myers, C.E. The school as a selecting labeling system. *Journal of School Psychology*, 1967, 5, 270-274.
- Schurr, T.K., Towne, R.C., & Joiner, L.M. Trends in self-concept of ability over two years in special class placement. *Journal of Special Education*, 1972, 6, 161-166.
- Shaw, S.F. An assessment and comparison of elementary classroom teachers' attitudes and behaviors in relation to mildly handicapped children (Doctoral dissertation, University of Oregon, 1971). *Dissertation Abstracts International*, 1971, 32, 3128-A.
- Shotel, J.R., Iano, R.P., & McGettigan, J.F. Teachers attitudes associated with the integration of handicapped children. *Exceptional Children*, 1972, 38, 677-683.
- Skinner, B.F. *The technology of teaching*. New York: Appleton-Century-Crofts, 1968.
- Spache, G.E., & Spache, E.B. *Reading in the elementary school third edition*. Boston: Allyn and Bacon, Inc., 1973.
- Stefano, M.A., Gesten, E.A., & Cowen, E.L. Teachers' view of the treatability of children's school adjustment problems. *Journal of Special Education*, 1977, 11, 48-53.
- Strauss, A.A. & Lehtinen, L. *Psychopathology and education of the brain-injured child*. New York: Grune and Stratton, 1957.
- Thorndike, E.L. *Principals of teaching based upon psychology*. New York: Seilec, 1906.
- Vaac, N.A. A study of emotionally disturbed children in regular and special classes. *Exceptional Children*, 1968, 35, 197-202.
- . Long term effects of special class instruction for emotionally disturbed children. *Exceptional Children*, 1972, 39, 15-22.

- Viel, P.J. Prime areas. *Journal of the B.C. Primary Teachers Association*, 1979, 21, 48-50.
- Warner, F., Thrapp, R. & Walsh, S. Attitudes of children towards their special class placement. *Exceptional Children*, 1973, 40, 37-38.
- Washburne, C.W. Educational measurements as a key to individualized instruction and promotions. *Journal of Educational Research*, 1922, 5, 195-206.
- Watson, J.B. *Behaviorism*. New York: Norton, 1925.
- Zintz, M.V. *Corrective reading*. Dubuque, Iowa: Wm. C. Brown Co. Publishers, 1972.

APPENDIX A

*A Description of the Gates-MacGinitie Comprehension and Vocabulary Tests B Form 1, C Form 1 and D Form 1M.*

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THE GATES-MACGINITIE VOCABULARY AND COMPREHENSION TESTS  
FORM B1, C1, AND D1M

Form B1

This test consisting of two parts, vocabulary and comprehension, was administered to all grade two subjects. The Vocabulary Test sampled the child's ability to recognize or analyze isolated words. It consisted of 48 exercises, each of which contained four printed words and a picture illustrating the meaning of one of the words. The child's task was to circle the word that best corresponded to the picture. Gradually the words became harder and were presented with words more similar in details and general appearance. The time limit for this test was 15 minutes. The comprehension test, containing 34 passages of increasing length and difficulty, measured the child's ability to read and understand whole sentences and paragraphs, not the mere ability to recognize words. Each passage was accompanied by a panel of four pictures. The child's task was to mark the picture that best illustrated the meaning of the passage or that answered the question in the passage. The time allotment for this test was 25 minutes.

*C Form 1*

This test consisting of two parts, vocabulary and comprehension, was administered to all grade three subjects in this investigation. The vocabulary test sampled the child's ability to recognize or analyze isolated words. It began with 12 exercises, each of which contained four printed words and a picture illustrating the meaning of one of the words. It was followed by 40 exercises, each consisting of a test word followed by four other words, one of which was similar in meaning to the test word. The format was similar to the picture exercises, with the test word replacing the picture in function. The child's task was to circle the word that meant most nearly the same as the test word. The time allotment for this test was 20 minutes. The Comprehension Test measured the child's ability to read and understand whole sentences and paragraphs. The test contained 24 paragraphs of increasing length and difficulty. Each paragraph was followed by two questions with four alternative answers for each question. The child's task was to circle the best answer for each question. The time allotment for this test was 30 minutes.

*Form D 1M*

All subjects in this investigation in grades four through six received form D1M for measures of vocabulary and comprehension. The Vocabulary Test contained 50 items, each consisting of a test word followed by five other words, one of which was similar in meaning to the test word. The student's task was to choose the word that meant most nearly the same as the test word. Gradually the words became less common and more difficult. The time allotment for this test was 15 minutes. The Comprehension Test measured the student's ability to read complete prose passages with understanding. It contained 21 passages in which a total of 52 blank spaces had been introduced. For each blank space a choice of 5 completions was offered. The student had to decide which one of the five completions best conformed to the meaning of the whole passage. The time allotment for this test was 25 minutes.

## APPENDIX B

*The Informal Reading Inventory (IRI) and an Example of  
Combining The Diagnostic Information For One Student "Brad"*

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*DIAGNOSIS (PREREQUISITE SKILLS)*

*IRI Oral Section.* The student began reading a paragraph estimated to be two grade levels below his instructional level as determined by teacher observation or the student's suggested placement from the Dolch and Schonell word lists. The student began reading at a low enough level in order that he/she would experience success and not become discouraged. On the teacher's record, errors, substitutions, mispronunciations, repetitions, omissions, and insertions were recorded. The errors were subtracted from the total number of words in the passage and the percentage of accuracy calculated. (A tape recorder was helpful for recording errors.) From this method, the student's instructional level was determined, the instructional level being 95 per cent word accuracy and at least 75 per cent comprehension. Students would be stopped from reading orally when they reached their frustration level, i.e., the point where many oral reading mistakes were made, comprehension was poor, and they appeared tense and insecure.

*IRI Listening or Capacity Level.* The listening potential or capacity level was established when the remaining paragraphs were read aloud to the student and he

was asked the comprehension questions. The level at which the student could answer 75 per cent of the comprehension questions correctly was the capacity level.

*IRI Silent Reading Section.* The student read the passages silently and, when finished, the teacher asked comprehension questions that were answered orally. A mastery level of 75 per cent was required. Rates of silent reading were determined by a stop watch.

Following diagnosis, the data was condensed into a specific "skills sheet." Each skill was checked for mastery based on the data from the diagnosis. By combining a student's sight vocabulary score, graded word score, spelling score and IRI, an instructional level was determined. The following is an example of information from a student, "Brad."

*"BRAD"*

	<u>Preprimer</u>	<u>Primer</u>	<u>Late first grade</u>
sight vocabulary (Dolch List)	40/44	38/40	30/40
Graded Word Test (Schonell)	2.1		
Graded Spelling Test (Schonell)	1.8		
Informal Phonics Checklist	<ul style="list-style-type: none"> <li>- confusion of short vowels i and e</li> <li>- confusion of final e generality</li> <li>- did not know long vowel combinations ee, ea, ai, ay, oa, ow</li> </ul>		

## IRI

Oral Reading	2.0
Silent Reading	2.0
Listening	4.5
Capacity	

Reading Rate 72 words per minute at beginning grade two level.

Instruction level 1.8

APPENDIX C

*Examples of Long Range and Specific Objectives  
For a Student "Brad"*

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2000

### OBJECTIVES

During the past few years, an increased effort has been directed toward establishing clear, useable definitions of what a child's educational program should be. If goals and objectives were stated generally or vaguely, they would be meaningless in terms of specific curriculum planning. As an example, the following objectives were written for Brad based on the information obtained from the diagnosis.

Brad was in third grade but in his fourth year of school, and his instructional level for reading was 1.8. He did not have mastery of the third Dolch list, expected at the end of grade one, thus supporting the instructional level of 1.8. Examination of his spelling mistakes found he had "bran" for brain and "sem" for seem, suggesting confusion on final "e" and the long vowel combination "ee" which were also evident in his oral reading from the IRI. In the oral reading section at the 2.0 level, Brad's reading rate was only 72 words per minute. Specific objectives were written for Brad, as follows, from September 15.

*Long Range Goal*

On December 15th Brad would have an instructional reading level of 2.5, as measured by the *Lyons Carnahan Informal Reading Inventory*, with an oral reading speed of 100 words per minute.

*Immediate Specific Objectives*

- (a) Given Dolch List 3, Brad would know 90 per cent of the words by October 15th.
- (b) Given Dolch List 4, Brad would know 90 per cent of the words by November 15th.
- (c) Given Dolch List 5, Brad would know 90 per cent of the words by December 15th.
- (d) Given the complete Dolch List of 220 words, Brad would know 100 per cent of the words by January 30th.
- (e) Given a list of 20 final "e" words Brad would be able to identify 90 per cent of the words by November 15th.
- (f) Given a list of 100 words containing final "e" and long vowel combinations .ee, ea, oa, ai, and ay Brad would recognize 90 per cent.

APPENDIX D

Example of Reinforcement Using Tokens

### REINFORCEMENT

Tokens could be earned during group instruction time. Reading lessons were divided into three sections: (a) phonetic skills, (b) vocabulary development (c) silent and/or oral reading. The following would be a typical lesson.

#### *Objectives*

1. The student would correctly identify the sounds (/sh/, /th/, /ch/).
2. The student would correctly identify, in flash form, the following vocabulary: *these, that, next, shop, sleep, who.*
3. After silent reading, each student would correctly answer one question from the story.

#### *Procedure*

Each student was given a chalkboard and asked to write/print the sound he heard at the beginning of these words: *chance, shell, chalk, thirst, think, shape.* Students were then asked to write/print the sounds they heard at the end of these words: *wash, church, tooth, pitch, slash, teeth.* The teacher marked each response with coloured chalk

in a margin on the chalkboard. After the twelve words were completed, the check marks were added up. Tokens were awarded for 12 correct, three tokens, 10-11 correct, two tokens, less than nine, one token. The six vocabulary words were introduced and incorporated into the game of "Slam." Fifteen known words and the six new words were placed face down upon the table. The students stood and placed one hand behind their back and one hand flat on the table. The teacher called a word; each student scanned the words then quickly put his hand on the called word. At the end of the game, the student with the most cards received two tokens; everyone else finishing the game received one token. Finally, the students silently read the assigned pages with the teacher. The teacher asked each student a question for which he received one token for a correct response. At the termination of the lesson, tokens were given to students to place in their token bags.

Tokens could be earned for seatwork exercises under different categories: on time, all correct, neatness and occasionally, bonus work. Seatwork turned in for marking before recess received one token for punctuality and finishing a task. If the work was correct, two tokens were awarded; however, mistakes could be corrected, handed in before recess, and one token awarded. Neatly done seatwork was a high priority; therefore, work neatly done received

two tokens. Outstanding work, as judged by the teachers, was displayed on the "Good Work" board and the student received a total of seven tokens. Once a week, for each reading group, bonus work was available which was extra practice of a particular skill. All bonus work was optional; however, students could earn two-three additional tokens by correctly completing the work.

Finally, tokens were awarded for playing academic games such as "Pirate Treasure." In this teacher-made game, the board had 23 squares. The objective was for the players to claim the treasure (five tokens). On the journey, two squares were "Return to Start," one was Davey Jones' Locker, several were bonus squares (containing one token), and one square was "Claim the Treasure." The "Claim the Treasure" square was half way on the board and if a player landed there he/she may try for the whole treasure by answering a difficult question. Phonetic skills, vocabulary development, phrases and reading paragraphs could be incorporated into the game. The game ended when someone had claimed the treasure.

Examples of social reinforcers found successful, particularly in the latter part of the year, were "happy notes," phone calls to parents and merit certificates. Happy notes were put on a special card with the student's deeds recorded. The note was signed by the aide, teacher

and principal. Phone calls home were made occasionally by the principal, the aides or the teachers.

APPENDIX E

Examples of Attending to the Task

*ATTENTION TO THE TASK*

In an effort to have students actively engaged in the learning process, "every pupil response techniques" (EPRT) were used.

*Every Pupil Response Techniques.* Every child in the group was given a tongue depressor with a card stapled on it. The card had either "yes" or "no" printed on it. Students, approximately two to four per group, responded in unison to the teacher's questions by displaying an answer, i.e.:

Teacher said: "The vowel sound heard in 'rain' was long  
O."

Students responded with "no" card.

Teacher said: "The 'th' sound heard in 'that' was the  
same as the one heard in 'then'?"

Students responded with "yes" card.

A slightly different form of EPRT was to give students a set of three cards numbered 1-2-3. On a chart or chalk board the numbers were placed next to words i.e.: 1-pool, 2-cool, 3-tool.

Teacher asked: "Which of these words would you use to fix  
something?"

Students responded with number three card.

A sight vocabulary review card could be used having the words with number equivalents placed on the board or a chart: 1-come, 2-rain, 3-happy.

Teacher said: "This falls from clouds."

Students responded with card number two.

*Tachistoscope.* A useful device for helping children to pay attention was the tachistoscope. Tachistoscopes were available as overhead projectors for group presentations and as individual units. They provided controlled exposure of geometric designs, pictures, digits, words and phrases which varied from a full second to 1/100 of a second. The simplest form of material was line drawings of familiar objects which a child could recognize. Later objects were shown in incomplete form such as a clock without hands, or a dog with three legs. Symbols were flashed in pairs, with students expected to determine if two symbols were identical ( $\triangle$ ,  $\square$ ), facing the same direction ( $\perp$ ,  $\lrcorner$ ), or the same size ( $\circ$ ,  $\bigcirc$ ). Digits varying in length from two to seven numbers were used as tachistoscope materials to foster memory skills and accuracy of visual perception.

*Tokens.* Tokens were also used to ensure on-task behavior. The teacher determined a particular child was not attending to the task. The lesson continued with no interruption or scolding of the non-attending student.

The teacher would place his finger on his nose, in his ear or on top of his head; meanwhile, the attending students copied the teacher's action. The attending students received two tokens. The movement by the attending students would usually bring the non-attending student back on task.

A lesson for a particular group could be dropping the "e" before adding "ing" endings. Two words were placed on the board (have, come) and covered with a piece of paper. At the conclusion of the lesson, the paper was removed and a student selected to change both words. If the student was successful, the entire group received three "bonus tokens." Students were told in advance that bonus tokens would be earned at the conclusion of the lesson.

## APPENDIX F

Example of Appropriate Practice

### APPROPRIATE PRACTICE

*Concentration.* Approximately eight pairs of playing cards were selected from the deck. Cards were placed face up so students could memorize the positions, then turned face down and students attempted to select pairs. If the student was successful, he kept the pair; if not, both cards were turned face down and the next student tried. Tokens were placed on some cards, given for correct pairs and for finding the "mystery pair" (determined ahead by the teacher). Similar concentration games were played using pictures, letters, numbers, and words. These games were played exactly as the card game.

*Sight Vocabulary Practice.* Each new story contained vocabulary that students had to master. The number of words introduced during each lesson was about six. Each student in the group received six small word cards (approximately 2"x4") on which the new vocabulary was printed. The teacher had a similar set of cards (approximately 4"x8") on which was printed each new word. The words were introduced, discussed, and arranged in a pocket chart located in front of the students. Students were asked to arrange their words in the same order. As the lesson progressed, the teacher re-arranged the words instructing

the students to do the same. Students were asked to place a particular word at the top or bottom of their list. On occasion students were given blank cards and as each word was introduced the student neatly printed the word on a card. The identical procedures for working with the cards were followed.

*Word Boxes.* Every student received a shoe box divided into two compartments. The two sections were "known words" and "demon words." The demon words were those words causing difficulty and needing further practice. During the week, the aide or teacher flashed all new words to the student. All words identified correctly were placed in the "known words" compartment. Words not known were given a red check mark and placed in the "demon word" section. During free time or other specified times, students worked individually or in pairs on their demon words. Once a "demon word" became a "known word" the check mark was circled and the card placed in the "known word" section. The word box procedure was reinforcing since students could see the "known words" pile growing.

*Ring of Words.* The teacher cut 3x5 cards for basic sight words presently being taught. A hole was punched in the upper left hand corner of each card and the student received a wire ring. The word cards were flashed for the student and he was asked to read the words. When the student

gave the correct response to a word, he received the word to wear on his ring. Boys often slipped the rings around a belt loop or their belt buckle.

*Uninterrupted Sustained Silent Reading (USSR).* Silent reading took place daily, and the amount read varied from a few sentences to complete stories. The USSR time, initially 10 minutes, was gradually increased to a level that each student could cope with satisfactorily. Books were selected from the *Scholastic Books Service*, school library, public library, supplementary readers or from home. The crucial ingredient for success in USSR activities was that the reading material be at the students' independent or recreational reading level. At the conclusion of the USSR time, no questions were asked pertaining to the reading; however, students wishing to volunteer information were encouraged.

*Oral Reading.* Oral reading took place daily and students read for a three minute period to the teacher or aide. The purpose of the activity was to hear the students read and to record errors in phonetic skills and vocabulary. Mispronounced words were corrected, unknown words provided and all errors recorded. Three or four comprehension questions were asked to ensure understanding of the passage. Words missed were placed on cards and put in the "demon word" section of the student's word box.

*Games:* Games were incorporated to motivate practice. One game, "BANG," was developed as each reading group began to accumulate sight vocabulary and phonetic skills. The sight vocabulary and phonetic skill cards were placed in a cardboard box with the reading group's name on the box. For every 12-15 words placed in a box, a similar word card with "bang" printed on it was placed in the box. The cards were mixed up and students selected cards from the box without looking. If a student could identify the word, he kept it; if not, the word went back into the box. However, if the student selected a card with "bang" on it, he put all the cards he accumulated back in the box. Winners of games were the first to collect ten cards or the student with the most cards after ten minutes.

Another game was jallopy derby. A race track, made from a large piece of cardboard (24"x48"), was divided into three inch spaces with a starting and finishing line. Words used were placed on a chart or on individual cards. A die was tossed; the student moved as many spaces as the numbers on the die, if he could say the words. If he couldn't say each word, he lost his turn. Each race was one lap and the winner was the one who came out even with the finish line first. Should a potential winner throw a six and have only three spaces left, he moved just one space for the word he said. Coming out even with the finish line

added excitement to the game. It gave each child a chance to become a last minute winner.

APPENDIX G

Examples of Corrective Feedback

*CORRECTIVE FEEDBACK*

*Seatwork.* Seatwork from duplicator material, workbooks, or blackboard exercises was always marked. The day's timetable was arranged in order that assigned work was marked and corrected before students began new work. Marking was done by aides and teachers; furthermore, time was allotted for correcting between reading groups. Students were assigned seatwork from individualized reading kits made by teachers. Materials for the kits came from old workbooks or teacher guidebooks. Exercises were placed on laminated paper. Students took the assigned card, completed the exercise and marked their own work since the answers were located on the back of the card. All individualized reading kit material was self-correcting. Syllabication tapes were available with various syllabication rules being applied. Each tape had a laminated card with 20 words accompanying it. The student selected tape A, side 1 and the card marked tape A, side 1. The card was provided in order that the student could see and hear the word. The student was given the word *funny* and asked to divide it into syllables. At the conclusion of the exercise, the answers were provided on the card, i.e. *funny* is divided *fun-ny*.

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SOME APPLICATIONS OF GALLOWAY'S THEORIES OF  
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