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An Exploration of the Effects of
Cognitive Language Therapy on the
Expressive Oral Language Skills of the Language
Learning Disabled Preschool Child

by

Kim Judith Calder

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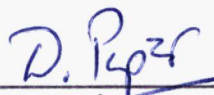
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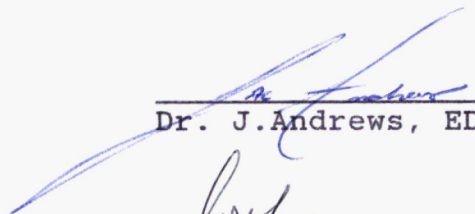
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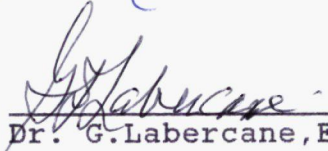
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "An Exploration of the Effects of Cognitive Language Therapy on the Expressive Oral Language Skills of the Language Learning Disabled Preschool Child" submitted by Kim Judith Calder in partial fulfillment of the requirements for the degree of Master of Science.



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ABSTRACT

The learning disabled population is typically characterized as displaying disordered oral language skills. Language difficulties are documented across all three language components (form, content, use). Despite the widespread acknowledgement of this problem, there is a paucity of research on the effectiveness of standard language interventions for this particular special needs group.

The specific purpose of this study was to investigate the impact and effectiveness of a cognitive language therapy on the language learning disabled preschool child. The Language Facilitation - A Complete Cognitive Therapy Program (Cimorell Strong, 1983) was chosen for its apparent 'match' to current language theory and intervention methodologies. The program's tenets are that through cognitive stimulation and hands-on activity, in natural play settings which allow for meaningful social interaction, techniques such as modelling, prompting, expanding, imitation, and probing will effectively enhance and develop the child's skill in all three language components, and hence, their communicative competence.

Four language learning disabled preschool children were selected for the treatment program. Pre- and post-assessments were performed and videotaped. The interactions were transcribed and coded in three different ways to

determine the child's approximate level of language functioning across the three language component areas. The treatment sessions were also videotaped for review by the researcher and research assistant. Running notes regarding the childrens' specific language skills, as well as behaviors, attitudes, and overall communicative competence were made. In addition, the researcher (as participant observer) provided running notes of the general impact on the children of the program objectives and procedures.

The results of a comparison of pre- and post-assessment data, as well as the observational data were compiled. Changes in some areas of expressive oral language were noted. More importantly however, were the general impressions, suggestions, and recommendations regarding the Cimorell Strong program objectives and procedures which emerged over the duration of the treatment.

It is concluded that language learning disabled preschool children can benefit from a cognitive language curriculum which has particular characteristics. These include: a limitation on behavioral techniques and questioning routines, inclusion of a metalinguistic approach, increased emphasis on communicative competence, and a more natural and open-ended play environment involving the childrens' own spontaneous language and thinking skills.

Suggestions for future study in the areas of communicative competence and LD children are noted.

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	x
Chapter	
I. INTRODUCTION.....	1
II. BACKGROUND TO THE RESEARCH.....	6
Language Development	
Historical Perspectives.....	6
The Development of Language Acquisition Theories in the Twentieth Century.....	6
Expanding Focus: Contributions to Child Language Development Theories..	11
Emerging Models of Language Development...	14
Language Functions.....	14
Communicative Competence.....	15
An Integrated Model.....	17
Importance of Language in Total Development.....	18
The Language Learning Disabled Child	
Oral Language Learning Disabilities.....	19
Form.....	21
Content.....	21
Use.....	22
LD Oral Language Research and the Integrated Language Model.....	24
LD Etiology.....	26

Language Remediation	
Historical Perspective/Specific Programs.....	27
A Contemporary Language Program.....	31
Language Remediation and the Learning Disabled Child - The Purpose of Further Investigation.....	34
III. RESEARCH DESIGN AND RATIONALE.....	36
The Nature of the Phenomenon Studied: Language Development and Assessment.....	36
Underlying Assumptions and Characteristics of Standardized and Nonstandardized Assessment Tools/Procedures.....	37
The Questions About the Phenomenon: Open Ended.....	40
Case Study Characteristics and Rationale for Use.....	41
Types of Evidence.....	42
Data Collection Methods.....	43
Methods	
Subjects.....	45
Pre- and Post-Assessment Procedures.....	47
Mean Length Utterance.....	48
Assigning Structural Stage.....	48
Type Token Ratio.....	52
Dore's Conversational Acts Taxonomy.....	52
Intervention Methods.....	53
Data Analysis.....	59
Quantitative Data.....	60
Qualitative Data.....	60

Further Considerations.....	61
IV. RESULTS AND DISCUSSION.....	65
Quantitative Data.....	65
TTR (Type-Token Ratio).....	72
MLU (Mean Length Utterance).....	73
Dore's Conversational Acts Taxonomy.....	73
Qualitative Data.....	74
Subject 1 - Daniel P.....	74
Subject 2 - Steven M.....	78
Subject 3 - Todd B.....	82
Subject 4 - Jennifer L.....	84
Playtime.....	86
General Anecdotal Notes.....	88
Objectives and Method of Instruction.....	88
Instructor Changes.....	90
Subject Changes.....	91
Implications of Program Modifications.....	92
V. SUMMARY AND CONCLUSIONS.....	95
Subject Response.....	95
Instructor Modifications.....	97
Environment, Setting, and Methods of Instruction.....	99
Technical Aspects of Data Collection and Evaluation.....	100
Suggestions for Future Implementation....	101
Conclusions.....	105

REFERENCES.....112

APPENDIX.....120

A: Parent/Researcher/Assistant Researcher
Evaluation of Language Growth Checklist.....121

LIST OF TABLES

Table	Page
1. Brown's Predicted Chronological Ages and Age Ranges Within One Standard Deviation of the Predicted Value For Each MLU.....	49
2. Stage Assignments for 14 Grammatical Morphemes.....	51
3. Dore's Conversational Acts Taxonomy.....	54
4. Within Subject Comparison of Pre- and Post-Assessment Scores (All Language Components) - Randomized Correlated t-test.....	66
5. Between Subject Comparison of Pre- and Post-Assessment Scores (Individual Language Components) - Randomized Correlated t-test.....	67

CHAPTER 1

Introduction

Special educators who work with learning disabled children are well aware of the expressive oral language disorders that this group typically exhibits. Learning disabled (LD) children frequently suffer from disturbances in the syntactic, semantic, and pragmatic components of language. The effects that oral language disorders have on other areas of development are well documented. What is lacking, however, is an understanding of how these disorders can best be remediated.

Confusion about expressive oral language remediation with the LD population stems from two areas: one relates to the apparent divergencies in current language remediation, and the second involves the matching of language interventions with emerging theories of LD etiology.

Many of the current techniques used in language therapy are products of historical trends in language theory. Remnants of empiricism, behaviorism, rationalism, Piagetian cognitivism, social interaction principles, and psycholinguistic processing still exist, in varying degrees, as we struggle to develop more integrated and relevant language interventions. Among the therapies which are most prevalent are those which focus on isolated language components and which are delivered within a behaviorist perspective. Often little meaningful interaction occurs,

particularly when some therapies require the child to do repetitive language drills. While these types of rather dated programs continue to be used, new trends in language remediation are beginning to appear. The emergence of movements such as communicative competence are at the forefront of today's intervention strategies. The focus of these type of remediations is on developing functional, meaningful communication skills which will transfer across settings. Unfortunately, specific complementary therapy programs are sparse. Research documenting the effectiveness of these therapeutic programs is also minimal.

This complicates the special educator's task of remediating the oral language deficits of their LD students. Educators must not only ask how current language interventions reflect emerging language theory, (and struggle to find contemporary therapies), but also ask whether emerging therapies are suitable for specific populations such as the learning disabled. The mystery of learning disabilities is beginning to receive more extensive study and conceptual frameworks are developing. Paradigms now seem to reflect a belief that LD etiology involves disorders in cognitive processing, and more specifically, in metacognitive skills.

The current LD paradigm, which is rooted in cognitive psychology, traces difficulties in learning, (including language learning), to disordered mental processing. In particular, it is held that learning disabled individuals

lack or are deficient in effective metacognitive planning, monitoring, or reviewing skills related to their performance. For example, while they may have the specific academic skills to complete a task, they fail to self-check or correct their performance.

This is significant when evaluating language intervention programs. According to current theory, it is logical to assume that language programs for learning disabled children should be metalinguistic, encouraging thinking/monitoring of one's own language. It may be predicted that current language interventions which attempt to focus on communicative competence, but which continue to reflect historical trends in language theory, and do not incorporate metacognitive/metalinguistic strategies, may be less successful with the LD population.

This paper will review historical and current trends related to language development and remediation, as well as the emerging paradigm of metacognition within the learning disabilities domain. Further, a remediation program which seems to reflect current language theory will be selected and tested with a small group of learning disabled children. Finally, an evaluation of the remediation program will be presented. The overall purpose is to determine the components of a language remediation which seems best suited to the learning disabled preschool population characteristics. The main overall purpose is to determine which program characteristics (objectives and procedures)

are interesting and engaging to the children, which allow natural flow of language and activity, and which ultimately enhance the communicative competence of this special needs group.

In order best to examine the levels of language development of the subjects and the apparent effects of the intervention, a case study research design will be used. It is believed that this approach will permit closer examination of the phenomena within a more natural context than other procedures would allow. Within this framework both qualitative and quantitative types of data will be gathered, to provide a wide range of evidence about the effects of the intervention. A variety of data collection methods (ethnographic/phenomenological, non-standardized tests) will be used.

Following the analysis of the data, a critique of both the language intervention as well as the research design and methods will be presented with respect to the theory of language development and assessment, and of learning disabilities. Recommendations for both future studies and language interventions for the LD preschool population will be made.

In summary, the LD preschool population is a special needs group which typically exhibits disorders in expressive oral language. While language intervention programs are shifting toward a communicative competence perspective on the surface, they continue to reflect, at a deeper level,

historical and outmoded trends in language theory. Emerging paradigms of learning disabilities are focusing on current cognitive psychology and, in particular, on metacognitive/metalinguistic perspectives in this field. It is important to examine how a particular language intervention which is not based on current LD theory will influence this group of children in terms of their attitudes and reactions to the procedures and objectives, as well as how their overall communicative competence is affected.

CHAPTER 2

Background to the Research

The purpose of this study is to test prevalent assumptions about language theory and remediation against the existing knowledge regarding learning disabilities. It is necessary to review each topic separately before attempting to integrate them. First, a historical review of language development theories will be presented. From this, emerging models will be outlined in order to establish a framework for the discussion of language development problems within the learning disabled population. Finally, existing language intervention designs will be reviewed and their appropriateness for the LD population will be discussed.

Language Development

Historical Perspectives

The development of language acquisition theories in the twentieth century.

Two prominent perspectives which have dominated psychology over the past one hundred years - empiricism and rationalism - have greatly influenced the development of language acquisition theories (Isaac, 1979). The first

perspective is tied to the claim that humans are born with no predispositions, but rather, learn as a result of stimulation from the environment. The second is tied to the claim that man is born with innate abilities. Aspects of both perspectives are seen in subsequent theories of language acquisition and development.

Empiricism dominated psychology at the turn of this century. At that time science was very structuralist in nature and scientists studied human evolution and development in terms of prescribed, identifiable stages and structures. It was believed that development and growth resulted in more complex forms of life (Muuss, 1988). Scientists and psychologists strove to measure and quantify such growth.

Wilhelm Wundt, a prominent empirical psychologist of the time, maintained that each human was born with a tabula rasa and developed only as a result of stimulation and experience with the physical environment (Carroll, 1986). At the same time however, he and other early psychologists were characterized as 'mentalists', (early cognitivists), because they were concerned with the internal mental structures which they believed were built via environmental stimulation. (This, once again reflected the focus in science at the time).

Wundt and others believed that it was possible to investigate the development of mental structural associations by employing the same rigorous scientific

procedures found in the natural sciences. They attempted to objectify their investigations by breaking down these mental acts into simpler component parts, or "atoms", (Carroll, 1986, p.26) that could somehow then be measured, traced, timed, and so on.

As with other human behaviors, humans were thought to learn language through mental associations which were the result of environmental sensations (Carroll, 1986; Stern, 1983). The mentalist-empiricists then studied the development of language by analyzing an individual's internal array of associations (Carroll, 1986). Lieberman's work is an example of this focus on structuralist principles. His 'motor theory' attempted to explain the physical mechanisms involved in language perception and articulation. His model of speech perception isolated each stage of the process into discrete acoustic units of pattern recognition (Hörmann, 1979).

Many empiricists became disillusioned with the internal (mentalist) focus that some of their colleagues were taking, preferring to rely on more concrete, observable behaviors to study human learning and development. This, it was believed would yield more pure, scientific data. Strong behaviorism emerged with the work of B.F. Skinner. While Skinner believed that learning was the result of environmental stimulation he was clearly less interested in mental structures, indeed, he denied the existence of the internal workings of the mind -- or their role in the explanation of

human development. Skinner argued that behaviors (such as language use) were acquired as a result of the influence of antecedents and consequences in the environment. According to Skinner, children learn to use language through the presence of reinforcers (Pflaum, 1986; Hörmann, 1979). This strong behavioristic learning theory was later challenged and rejected.

A major paradigm shift in the thinking about the psychology of the human mind at birth occurred, from empiricism to rationalism, when linguist Noam Chomsky proclaimed that Skinner's theory could not entirely explain language acquisition (Carroll, 1986, Pflaum, 1986). He pointed out that children do not hear, imitate, or receive reinforcement for every possible sentence combination and yet that they are able to generate infinite sensible permutations of utterances. The nativistic (rationalist) perspective was reborn with his theory of the language acquisition device (LAD).

Chomsky believed that individuals are born with an innate disposition to learn language (McCormick and Schiefelbusch, 1984). This was in sharp contrast to the early empiricists who considered man to be a 'blank slate' at birth. Although essentially a nativist, Chomsky borrowed from both the mentalist and behaviorist domains. Language development, he argued, required stimulation from the environment, but also operated by way of internal cognitive structures (Carroll, 1986). The LAD enabled the individual

to comprehend and generate sentences not through learned associations, but because of a genetic ability to process language at the deep structural level. While Chomsky's acquisition theory produced a significant shift in thought in terms of language acquisition, it was (and remains) highly controversial and has since lost influence (Carroll, 1986; McCormick and Schiefelbusch, 1984). In addition, a major criticism of Chomsky's work is that he narrowly concentrated on only the syntactical components of language, at the exclusion of semantics (McCormick and Schiefelbusch, 1984) or language usage (McClean and Synder-McClean, 1978). Contemporary language theory integrates all three language components (Bloom and Lahey, 1978). A third criticism of Chomsky's theory is that the LAD theory cannot explain the differentiation in the speed of processing various kinds of grammatically complex sentences (Fodor, Bever, & Garrett, 1974).

It is evident that the trends in psychology throughout the early and mid part of the century influenced the psycholinguistic theories which emerged. Although several models of the child as a learner are to be found in the literature (Bruner, 1985), researchers in child language acquisition have tended to become polarized, arguing over the state of the human mind at birth (blank slate versus genetically acquired cognitive/linguistic structures) (empiricism vs rationalism) (Carroll, 1986; McClean and Synder-McClean, 1978). As well, the method of

learning language has varied between strict behaviorist and mentalist (cognitive) philosophies (Carroll, 1986; McCormick and Schiefelbusch, 1984). No exclusive orientation has solved all of the mysteries of how language acquisition and development occur. Child development theorists have taken parts of various historical psychological perspectives to formulate more inclusive paradigms outlining how and why language begins.

Expanding focus: Contributors to child language development theories.

Piaget and Vygotsky are two well-known child development theorists who contributed significantly to current beliefs about language learning. Their respective theories can be seen to incorporate ideals from both the empiricism/behaviorism, and rationalism/mentalism domains. That is, they discuss what language potential the child is born with, as well as the means by which further language development occurs. They attempt to deal with the issues of how and why language develops.

Jean Piaget is best known for his theory of logical, cognitive development. Piaget maintained that infants begin to develop cognitive structures through sensori-motor experiences (empiricism). The organism-environment interactions (haptic) are the impetus for psychological development (Fry & Lupart, 1987). He acknowledged the existence of some innate genetic structures such as the suckling response, but was more interested in the

development of thought structures (mentalism), and how these schemata influenced and controlled behaviors and future learning. As Fry and Lupart put it:

"Piagetians believe that although perception initially emerges from reflexive action schemata, these reflexes quickly become modified and strengthened as a result of the child's active exploration and assimilation with objects in the environment" (1987, p.17).

Piaget believed that certain cognitive structures must be in place before language use can begin. The child must have the ability to symbolize and use labels, and have learned that objects have permanence (Pflaum, 1986). Once the structures are in place, the child can use language to accompany, and at certain times to stimulate, future cognitive growth. Piaget believed that these experiences occurred extensively in early childhood through imitative play and role-playing.

Although Piaget's theory notably minimizes the role of language in cognitive development, he does acknowledge its functions. He noted a preponderance of egocentric speech among preschool children; that which centers on the child's own actions. This speech does not serve to structure or guide the child's behaviors, but rather accompanies it. In this respect, language helps to represent objects and events in the child's world, and therefore, reinforces the unconscious establishment of the representative cognitive structures.

Lev Vygotsky had a slightly different view of language development. He believed that infants were born with an innate need to be social beings (rationalism), but stressed the importance of adult mediation in the development of language (behaviorism). Vygotsky argued that humans instinctively transmit their culture to offspring through the interaction of adults with children. Through the socialization process (mediation), the child's knowledge and skills are enriched (Fry & Lupart, 1987).

Vygotsky believed that children acquire language as a tool for achieving social contact or for gaining desired objects. Cognitive structures are developed and controlled through the increased self control of language. The impetus for cognitive growth lies in the child's use of language for specific purposes (Vygotsky, 1978; Luria,).

While both Piaget and Vygotsky perceived language acquisition and development as occurring for different reasons and in different ways, they both incorporated the varying psychological perspectives which were prevalent during previous eras. They formulated theories which have had a strong influence on current beliefs in the area of language development and remediation. That is, contemporary perspectives consider both environmental and internal variables in the context of treating language disorders. The critical roles of sensori-motor activity, cognitive stimulation, purposeful language use, and adult mediation are recognized and integrated. Certain innate language

abilities are developed and enhanced through:

1. cognitive growth and stimulation via sensori-motor and 'hands-on' play experiences,
2. purposeful language use,
3. adult mediation and interaction.

The focus is shifting on to questions such as why and how language develops and what its purposes are in human growth and communication.

Emerging Models of Language Development

Language functions.

Both Piaget and Vygotsky saw use of language as central for the developing young child. The examination of language functions has received far more attention than it did in the early half of the century, particularly when compared to the Chomskian focus on the form of language during the mid 1900's. Both Piaget's and Vygotsky's work are reflected in current language theories and particularly in the communicative competence movement. This movement focuses on the ability of the individual to use his/her language in a variety of ways in order to function effectively in society. Halliday's hierarchy of language functions recognizes the various uses of language, and he proposed that there are seven universal functions of language:

1. instrumental
2. regulatory
3. interactional

4. personal
5. heuristic
6. imaginative
7. informative (Halliday, 1973)

These functions are also to some extent apparent in the theories of Piaget and Vygotsky. As Piaget noted, children use language during imitative play and child dialogues. This relates closely to the interactional and imaginative language uses that Halliday lists. Vygotsky wrote that child language emerges because of a need to be social, to control one's environment and one's mind. This relates closely to instrumental, regulatory, and interactional language functions. Halliday's language taxonomy recognizes the functions that language serves in meeting the internal cognitive and social needs of individual development. These needs have been well documented by both Piaget and Vygotsky.

Communicative competence.

It is clear that language is used for specific purposes and that it appears to be instrumental in interpersonal and intrapersonal development. The effectiveness of one's language use is a critical component in total personal functioning. It is this effectiveness of language ability and use which forms the basis of the communicative competence philosophy.

Communicative competence represents a major extension of Chomsky's 'performative competence' term, coined in the 60's. Chomsky referred to performative competence as the

ability to use specific grammatical knowledge. He differentiated between what a person knows about language form (deep structure) and how well he/she uses the knowledge (surface structure). Communicative competence is not just grammatical competence, however. Savignon (1982) cites four types of competencies which together form one's total communicative competence: these are grammatical, sociolinguistic, discourse, and strategic competencies.

Sociolinguistic competence refers to the societal rules of language use. For example, social greetings, or rules of not interrupting adult speakers. Discourse competence is the ability to keep conversation, monologues, or a series of sentences in a coherent meaningful, related whole. Strategic competence relates to one's ability to make necessary adjustments when communicating, so that efficiency and effectiveness will be ensured -- for instance, adapting the amount or form of information, or magnitude of voice. Communicative competence, then, is related not just to the form of language, but also to appropriate content and pragmatic dimensions. Competent communicators use their existing linguistic and cognitive knowledge pool (which includes tacit social competence) to help them in learning and in adjusting their communication to meet their own needs and those of their audience (Hymes, 1979; Savignon, 1982).

To be a competent communicator means more than the mastery of grammatical rules that Chomsky emphasized. It is a dynamic development of tacit knowledge of language and its

use in one's culture. As Savignon states, "communication is a continuous process of expression, interpretation, and negotiations" (1982, p.8). Communicative competence is not rehearsal of isolated language components in unfamiliar contexts. One cannot simply memorize discrete bits of linguistic knowledge but must acquire "whole chunks" (Newmark, 1979, p.161) of meaning. This extended notion of competence means that language is not developed solely through direct imitation and repetition of sentence forms, but rather through meaningful use and creativity of expression. In order for this development to occur, there must be motivating and relevant language use. The focus of communicative competence is on language processes, not solely language products.

In summary, the psycholinguistic theories of the past are a combination of empiricist/behaviorist, and rationalist/mentalist perspectives. Child developmental psychologists, such as Piaget and Vygotsky, have reflected principles from these perspectives in their theories of language acquisition and development. These theories stress the functions of language, resulting in a paradigm of effective language use for inter- and intra-personal purposes. In order to be a competent communicator, the individual must have grammatical, sociolinguistic, discourse, and strategic competence.

An integrated model.

The Bloom and Lahey (1978) language model represents an

attempt to encapsulate all components of language into one interactive model, signifying the importance of all language components for total communicative effectiveness. They see language as being composed of three parts - form, content, and use. The form of language refers to the syntax, phonology, and morphology. Content is the knowledge or message which is conveyed via the form. Usage encompasses both the communicative and thinking uses of language. An individual's communicative competence is determined by how effectively the individual combines these components (Hammill and Bartel, 1982). It is this combination and interrelatedness of language components which distinguishes the Bloom and Lahey model from previous psycholinguistic theories, such as those of Skinner or Chomsky.

Clearly, Savignon's communicative competencies also fit this model. Grammatical competence relates to form and content, sociolinguistic and discourse competencies relate to content and use, while strategic competencies seem to relate to the integration of all three components. Bloom and Lahey's form/content/use model represents the natural integration of all language components for effective communication.

Importance of Language in Total Development

While the nature of language as a medium for specific inter- and intra-personal uses has been emphasized, language contributes to other aspects of the individual's total

development. The literature constantly reiterates the relationship that language (in particular, oral expressive) has to other developmental aspects such as academic, emotional and social. The Alberta Education Learning Disabilities Resource Manual, for example, identifies four main reasons why oral language skills should be adequately developed:

- 1) It influences the social perceptions of [others].
- 2) It allows for more effective communication between teacher-student and student-peer.
- 3) Oral expressive language integrates with written expression and reading.
- 4) It is an important skill for success outside of school. (Special Education Services, Alberta Ed., (1984, p. 189).

Many researchers have confirmed that oral language disorders detrimentally effect various aspects of the individual's total development and functioning. Poor peer acceptance, low reading abilities, and subtle cognitive delays have all been cited in this context (Spekman, 1981; Siperstein, Bopp, and Bak 1978;; Bryan, 1974; Weiner, 1985; Lindgren and Richman, 1984; Carroll 1986; and Benton, 1978).

The Language Learning Disabled Child

Oral Language Learning Disabilities

Oral language disorders are cited in many definitions of

the learning disabled currently in use. According to the Learning Disabilities Association of Canada

"...such disorders may be manifested by delays in early development and/or difficulties in any of the following areas: attention, memory, reasoning, coordination, communication, social competence, and emotional maturation." (LDAC, 1986, p.1). (my underline)

Many provincial departments of education, such as the British Columbia Ministry of Education, define learning disabilities in a similar fashion to the U.S. Congress' definition in Public Law 94-142 (Section 5(b)4):

Those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. (Vincente, 1979, p. 5)

Research in the area of oral language learning disabilities has been minimal and often incongruous. Some patterns of disorders in terms of form, content, and use have been described, however. Following is a representation of the trends in the findings, as well as examples of the discrepancies in the research, of expressive oral language disorders in the LD population.

Form.

Within the form component, both phonological and syntactic disorders have been identified repeatedly. Catts and Kamhi (1986) state that many reading disordered children often exhibit a) a lack of phonological awareness, b) problems in encoding or representing verbal stimuli phonologically, and c) deficits in the retrieval of phonological information from memory. Morehead and Ingram (1973) (cited in Carroll, 1986) note that LD children commonly omit or substitute grammatical morphemes such as verb plurals (ie. 'he walk' for 'he walks'). Carroll (1986) reports that phonological development, although following a normal sequence of development, is often much slower for learning disabled children. As well, Carroll notes several common syntactic difficulties evident in the LD population. The LD have a significantly slower rate of development, frequently lack complex syntactic structures when speaking (e.g. clauses and conjunctions), and have difficulty comprehending or producing negative sentences such as "He can't go home" (p. 400). German (1982) has also focused on immature syntactic development, illustrating how it creates difficulties in oral comprehension of LD.

Content.

LD children have been identified as being impaired in the content language component as well. Carroll (1986) states that the LD use more elementary and concrete concepts when communicating orally. Wiig and Semel (1976) (cited in Catts & Kamhi, 1986) and Fry, Johnson, & Muehl (1970) found

that learning disabled children are frequently impaired in most aspects of syntactic-semantic processing, such as vocabulary development and lexical retrieval. The LD frequently experience difficulty understanding figurative language. They appear to lack the ability to relate bits of knowledge for the purpose of comprehending metaphors (Wiig and Semel, 1980). Ceci (1982) points out, however, that discrepancies in the literature exist in that some researchers believe that content difficulties may only be related to certain tasks, as opposed to the preceding studies, which refer to global content disorders.

Use.

The area which is currently receiving widespread attention in LD literature is that of language use. Donahue (1981) is a major contributor in this area, and she has identified difficulties in all areas of discourse and pragmatics. The LD are seen as less active in peer communication exchanges. They use less effective strategies for controlling conversation situations: that is, they are frequently unable to take turns or sequence their comments appropriately in order for an adequate and coherent flow of meaning to occur. The learning disabled apparently have difficulty in adjusting the syntactic complexity of their communication to the needs of different listeners, being less able to take into account the listener's perspective when formulating messages. As listeners, they are less likely to request further information or clarification from

a speaker. This finding has been replicated by Roth (1986), Olswang, Kriegsmann, and Mastergeorge (1982), and Spekman (1981).

Although researchers have found pervasive pragmatic difficulties in the LD population, other studies have failed to substantiate these findings. Carroll (1986), and Fey, Leonard and Wilcox (1981) (cited in German, 1982) report that learning disabled children are basically competent in language use and are sensitive to listener needs. Ulatowska, North, and Macaluso-Haynes (1981) found discourse patterns to have well-structured narratives and episodic frameworks. Schienberg and Holland (1980) found no violations of conversational rule system use. Dudley-Marling (1985) cites poor research design and subject selection as the main reasons for discrepancies in LD language research.

Despite some discrepancies, it does appear that patterns of oral language disorders in the LD population seem to be emerging from current studies. Language form is affected on all levels -syntactic, morphologic, and phonetic. Semantic difficulties are noted across situational and global contexts. Language use, encompassing pragmatic and discourse skills, often appears deviant. It is evident, however, that this body of knowledge is still limited (Martin, 1980). Of the research that is available on oral language learning disabled, how well does it fit Bloom and Lahey's interactive language model?

LD Oral Language Research and the Integrated Language Model

Although research has been conducted on isolated variables, much less attention has been paid to how integration of skills takes place. Donahue, Pearl and Bryan (1980) maintain that there have been only few attempts to carefully examine the interactions of syntactic-semantic (form-content) competence and social knowledge with various pragmatic skills (use). Hence, while current language theory supports the notions of interrelatedness of each language component, researchers continue to study the components in isolation. Following are two examples that illustrate this need for further integration.

As reported above, Carroll (1986) cites phonological, syntactic, and concept development as being delayed or disordered in the learning disabled child. In order to tie this data together, it would be necessary to investigate how the individual with content and form disorders uses language in a variety of situations. Does the individual attempt to compensate with useful pragmatic skills? Perhaps the language component which appears to be disordered when tested separately does not adversely affect the individual's overall communicative competence. By investigating and incorporating this information, a more accurate and holistic picture of the person's total communicative competence is possible.

Olswang, et al. (1982) have done a great deal of study

in language use. In order to complete the picture of the communicative competence of the LD child it would be important to discover if dysfunctional use is related to (or perhaps the result or cause of) disordered form or content. The individual may fail to use linguistic labels or reflective (internal) speech when processing new concepts. This may result in a depressed content (knowledge) base. Conversely, it could be suggested that a limited cognitive and linguistic pool may have deleterious affects on the child's ability to develop sociolinguistic or discourse competence (effective language use).

While many other studies can be cited as being fragmented in their investigation of disordered oral language, it is encouraging to note that some researchers have attempted to relate specific language difficulties to the other language components. Vetter (1982) has evaluated language disordered children within the natural classroom setting, taking note of where breakdowns in communication occur (form, content, or use) and how the disorder affects the total language behaviors of the child. Spekman (1981) discusses how some LD children adapt their form and content to meet different situational demands. German (1982) states that not only must deficient language forms be investigated, but also how the LD child utilizes these rules and skills across a variety of contexts (e.g. who is listening, where they are situated).

These examples demonstrate the attempts of researchers

to integrate all language components in their investigations, resulting in more holistic understandings of the LD child's total communicative competence. As Bloom and Lahey (1978) note, in order for research in the field of oral language disorders to uncover useful data and develop helpful tools for remediation, it must study and describe form and use in conjunction with content and meaning, across a variety of linguistic and non-linguistic contexts.

LD Etiology

The etiology of learning disabilities has yet to be firmly established. Definitions refer to central nervous system processing problems. Increasingly, researchers are exploring the metacognitive skills of the LD child and are revealing consistent trends. Torgesen (1986) and Wong (1985) hypothesize that the LD child, while having average intelligence, either lacks or fails to use effective metacognitive strategies. That is, they fail to effectively plan, check, monitor, test, revise, or evaluate their performance (Wong, 1985). If this is indeed the case, it is of interest to explore whether their deficient oral language skills (communicative competencies), which may be the result of poor metacognitive or metalinguistic skills (ie. those relating to the individual's monitoring of his/her own language) can be enhanced through the use of language intervention methods which do not utilize metalinguistic strategies.

To summarize, it is widely recognized in the relevant educational literature that the LD child typically suffers from expressive oral language disorders. Research is beginning to reveal trends which give credence to the Bloom and Lahey form/content/use model. Unfortunately, the investigation of oral language disorders has tended to be fragmented. The three language components are commonly studied in isolation and, consequently, a clear picture of the LD's integrated communicative competence has not yet emerged. Further, general hypotheses regarding the etiology of learning disabilities are leaning toward metacognitive perspectives. In light of the subconscious nature of language development outlined by Piaget, and to a lesser extent by Vygotsky, it is questionable whether a cognitive stimulation program which employs traditional methods of language remediation will be effective with this special needs population; a population which seems to require explicit remediation via metacognitive approaches.

Language Remediation

Historical Perspective/Specific Programs

Efforts in language remediation have paralleled historical beliefs of language development, particularly the work of Chomsky and Skinner. It is not surprising, then, that methods in the past have focused primarily on syntax taught via reinforcement and structured repetition. Few programs combine Piagetian or Vygotskian concepts in their

regimes; that is, particular cognitive stimulation or purposeful language use. Among the well-known programs which illustrate all of these fragmented perspectives in some way, and which are currently in use, are Fokes Sentence Builder Kit (Fokes, 1975), DISTAR (Englemand and Osborn, 1975), MWM Program for Developing Language Abilities (Minskoff, Wiseman, and Minskoff, 1972), and the Peabody Language Development Kits - Revised (Dunn, Smith, and Dunn, 1981). Following is a brief overview of each of these programs, indicating the merits or limitations of each with respect to current language theory.

The Fokes Sentence Builder Kit attempts to teach syntactic language skills (form). Visual cards are manipulated by the child to create grammatical sentences. Unfortunately, the tasks are not related to the student's experiential base and do not encourage spontaneous oral expression. Bloom and Lahey (1978) have concluded that there is no evidence to support the current practice of specific skill remediation, such as form, since transference to total communicative competence has not been demonstrated.

The DISTAR program also stresses syntax, but claims to include semantics and language use. The approach consists of very structured imitation drills, and reinforcement. DISTAR has been shown by several researchers, including Hammill and Bartel (1982) and German (1982), to be ineffective in leading to generalization of language performance beyond the bounds of classroom contexts. The

concerns of these researchers is over the lack of natural integration of all three language components.

The MWM program is modelled after the Illinois Test of Psycholinguistic Abilities (Kirk, McCarthy, & Kirk, 1985). The tasks are defined as sub-skills of language, such as auditory memory/perception/comprehension. The drills are mechanical tasks unrelated to any type of purposeful communication. Researchers, however, have not found sufficient evidence to demonstrate efficacy of these methods (Logan & Colarusso (1978) and Hammill & Larson (1974).

The Peabody Kit is one of the few programs which attempts to utilize a cognitive component. The stated objective of the Peabody program is to stimulate language development via cognitive development. Through communicative and sensori-motor experiences, general cognitive processing and consequently the child's language, is thought to improve. The language components which are focused upon are use and content (pragmatics and vocabulary). The Peabody kits are developmental in nature and allow for a more natural integration and stimulation of total language competence. Documented evidence of the effectiveness of the Peabody kits with various special needs groups shows varying results (Hamill and Larsen, 1974). Reports on the long term effects are also inconsistent (Dunn, Smith, and Dunn, 1981).

Although theories of language development have shifted to total communicative competence, most programs for

remediation remain dated. Many continue to utilize primarily behavioristic approaches, isolating language components and emphasizing small sub-skills of language. In many, mastery of particular sub-skills is believed to lead to increased communicative competence, and yet purposeful language use is rarely incorporated into the programs.

Not only is it questionable whether these types of interventions are effective with 'normally' developing children, it is of equal concern whether the methods are useful for special needs populations, such as the learning disabled. Can any of the standard behavioral methods such as imitation, repetition, modelling, or direct instruction of specific components, provide what is essential for total communicative competence to develop? Do cognitively based programs hold any more promise for the LD population?

With respect to existing language theory, several components can be identified which would be essential for a well-rounded language intervention program. These include a reflection of the Bloom and Lahey model, Piagetian and Vygotskian principles, and the communicative competence perspective. That is, a desirable language program must be one which naturally integrates all language components. In order to parallel current language theory, the program must focus on effective language use, as well as syntactic and semantic development. Secondly, communication must be relevant, purposeful, and motivating. Thirdly, social adult mediation may be usefully incorporated. Finally, the

program must also reflect the increased awareness of the relationship between language and cognition. In these ways, language intervention programs would more accurately reflect the contemporary theories and models of language development and communicative competence.

A Contemporary Language Program

The Cimorell Strong Language Facilitation - A Complete Cognitive Therapy Program (1983) is a contemporary program which purports to incorporate all language components to achieve an overall increase in communicative competence. It attempts to establish relevant hands-on activities so that cognitive development can occur. Through the proposed activities it is believed that meaningful language between students and instructor will result. (The program states that the 'instructor' role may be successfully assumed by parents, therapists, or classroom teachers, without specific training being required.) The author states her assumptions and claims in the textbook in the following way:

The program described in this book is an approach to the interaction of the syntactic, semantic, and pragmatic components of language. The program is designed to help children learn linguistic operations that reflect their mastery of linguistic rules and contain objects, actions, and events in a variety of relationships. It is also designed to help teach children a variety of linguistic rules that will enable

them to express a variety of functions. Finally, the program is designed to help teach children to use contextually appropriate utterances, including the appropriate answers to questions. (p. 3)

A definite relationship exists between cognition and language. If a child has difficulty with any of the developmental cognitive stages, he or she will have difficulties with the areas as they relate to language development.

The program described in this book can assist the language-impaired child's progression through these stages. In addition, the activities listed will enable the child to learn the following cognitive prerequisites for communication: to perceive the incoming stimuli; to process information gathered from the stimuli; to relate that information to objects and experiences; to store the information; to retrieve the information; to linguistically code symbols for objects and experiences (semantics); to order the information into linguistic sequences (syntax); and to adequately use the linguistic units to communicate and solve problems in various situations (pragmatics). (p. 10)

The general sequence in the implementation of therapeutic techniques is 1) to motorically involve the child(ren) in activity that encourages interaction with objects (including the persons in the

group) and events; 2) to linguistically mark the child(ren)'s actions; 3) to ask the appropriate probe question(s) depending upon the response(s) to be elicited from the child(ren); 4) to prompt a response from the child(ren) if necessary; 5) to provide the child(ren) with some form of reinforcement; 6) to expand the child(ren)'s abbreviated utterances: and/or 7) to comment upon the child(ren)'s utterance in relation to what is happening in the environment.

(pp. 9-10)

This program was selected for piloting in this study because of its apparent compatibilities with the Bloom and Lahey model, Piagetian and Vygotskian principles, and its focus on communicative competence. Like the Bloom and Lahey model, this program attempts to integrate all three language components. The underlying framework is Piagetian, in that Cimorell Strong advocates the development of cognitive schemata as a springboard for language development. While not explicitly stated, the Vygotskian perspective is implicitly included as the program attempts to set up meaningful and motivating experiences and verbal exchanges, involving some adult mediation. The adult (teacher) mediates the childrens' language by using traditional behavioral techniques such as prompting, imitation, and modelling. The activities are intended to be interesting and stimulating, providing opportunities for the children to use their language in a variety of ways. The ultimate goal

is to develop each child's communicative competence.

Language Remediation and the Learning Disabled Child - The Purpose of Further Investigation

As has been indicated above, it is widely acknowledged that LD children typically suffer from expressive oral language delays. These delays hinder cognitive, social, emotional and academic development. The problem is pervasive, and yet educators seem unclear as to how to best remediate these difficulties. Few interventions exist which integrate the three language components, provide meaningful practice, are motivating, and reflect understanding of learning dynamics. Therefore, data as to the effectiveness of contemporary programs with the learning disabled is sparse.

Although the Cimorell Strong program appears best to suit contemporary language theory by claiming to match current trends towards communicative competence, it fails to include metacognitive/metalinguistic strategies which also seem to be important in remediation efforts with some special needs groups. Rather, the program utilizes dated behavioral techniques. This raises three central questions:

1. can a program which reflects dated behavioral perspectives (modelling, prompting, and reinforcement), as opposed to current metacognitive/metalinguistic strategies, truly affect the communicative competence of the LD population?

2. can enrichment of cognitive experience alone increase linguistic knowledge and communicative competence?
3. what significant changes in child behavior and attitude can be noted as a result of the language intervention?

This study aims to investigate these questions through the implementation of the Cimorell Strong Language Facilitation - A Complete Cognitive Therapy Program (1983). A critique of the Cimorell Strong program will then be developed in terms of the Bloom and Lahey model, principles of communicative competence, Piagetian and Vygotskian perspectives, specific learning disabled oral language disorders, and LD etiology (ie. in terms of the principles to which the program claims to conform).

CHAPTER 3

Research Design and Rationale

Research designs are determined in part by the questions being asked about the phenomena of interest, as well as by the nature of the phenomena themselves (Evertson and Green, 1983). Prior to describing the specific research procedures of subject selection, pre- and post-assessment routines, intervention methods, and data analysis, it is necessary to establish the philosophical framework for the research. First, a brief review of language theory in its relation to language assessment and development will be presented. This section will illustrate the need for a specific research design when studying language phenomenon. Second, a discussion of the research design and rationale in terms of the questions proposed for this study will be presented.

The Nature of The Phenomenon Studied: Language Development and Assessment

As noted in the historical review of language theories, in current language theories, the major emphasis is on language as a functional tool, used for specific inter- and intra-personal purposes. As such, its development occurs in the context of meaningful and purposeful functioning. Language has no communicative value if not used in relation to some environment. The language user must consider external and internal variables in order to effectively

utilize language. Therefore, when one attempts to assess (for instance a child's) language ability, a holistic and inclusive perspective is essential. Language facility can only be understood in terms of its actual functioning within a natural communicative environment. Hence, one must observe language 'in action' before value judgments about it can be made. For this reason, it is essential to review assessment procedures in terms of their commitment to this functionalist view of language. There are two major types of language assessment - standardized and nonstandardized. Each one is predicated on distinctly different views of language. The major characteristics and assumptions inherent in each type of assessment will be discussed and compared within the context of the current perspective on the nature of language outlined above.

Underlying Assumptions and Characteristics of Standardized and Nonstandardized Assessment Tools/Procedures

There are consistent characteristics and underlying assumptions inherent in standardized assessment tools. Following is an overview of the most salient aspects of these devices:

1. Standardized measures provide reliable, objective, and unbiased quantitative data since the same materials, administration, scoring, and interpretation procedures are followed. The formal means of presentation is adult-centered (Braun, Rennie, & Gordon, 1987; McLean and Snyder-

McLean, 1978).

2. Standardized measures utilizing structured, imitative, or elicited tasks are valid means of revealing language ability and developmental level (Salvia and Ysseldyke, 1985; Blank, Rose, & Berlin, 1978).

3. A child's level of performance (emitted product) on these tasks is a reflection of his/her true developmental level (Ferguson, 1980).

4. Specific, discrete components of language can easily be tapped, and represent a child's functional language repertoire (Braun, et al., 1987; Valencia and Pearson, 1987).

5. Standardized measures are quick and cost effective (Scott, 1978).

6. The law of central tendency holds true. Normed tests are designed to maximize variability, minimizing errors so that individuals can be ordered from extreme above to below average performance (Gorth and Hambleton, 1972). Comparison of performance to a large norm-referenced group provides a significant gauge of the individual's level of development (Ferguson, 1980).

7. All children can be assessed with one tool because of the conformity and convergency of responses required.

8. Numerical scores can be converted into categorical information, useful in labelling children. Appropriate program planning can arise from this data (Werner and Kresheck, 1974).

In contrast to the above assumptions about language and testing procedures within the standardized domain, are the characteristics of the nonstandardized measures. Since these procedures grew out of a dissatisfaction with formal approaches to language assessment, the assumptions are inversely related to those outlined above:

1. Only free-speech samples provide an adequate picture of a child's overall language ability. Situations which are limited, foreign, or lacking in authenticity will not reveal true language ability (Fuchs, Fuchs, & Power, 1987; Braun, et al., 1987).
2. Natural, meaningful, motivating, and engaging interactions, in a social, human relation context, are ecologically valid (Wallace and Larsen, 1978).
3. Actual use of language in contexts where both parties are communicative contributors, is essential (Braun, et al., 1987).
4. All language components must be considered and viewed inclusively, in order to summarize a child's functional language level. A top-down approach to assessment is required (Bloom and Lahey, 1978).
5. Nonstandardized measures are often time consuming and lack specific constructs for implementation (Cazden, 1972; Miles, 1981).
6. It is not desirable to compare children to the 'norm', subjecting them to tests in which a certain number are destined to fail. Rather, gaining greater insight into how

language strategies and prior knowledge are utilized for effective communication, and which factors detract from this, is vital (Ysseldyke and Regan, 1980; Carney and Cioffi, 1987).

7. Individuality is valued, as are flexibility, divergency, and creativity of responses (Ferguson, 1980).

8. Scores are not safeguards to appropriate language remediation (Gorth and Hambleton, 1972; Scott, 1978; McCauley and Swisher, 1984). Greater understanding of how the child uses language across various contexts (process assessment) will lead to more effective program planning (Meyers, Pfeffer, & Erlbaun, 1985; Johnston, 1987).

While there are clearly strengths and weaknesses inherent in both types of assessment, it is reasonable to suppose that nonstandardized measures (which reflect more contemporary and interactionist view of language) may more accurately provide a reflection of true language functioning, or communicative competence, than standardized measures. Consequently, the examination of language development and growth within this study will be based primarily in nonstandardized procedures, in keeping with current thought about language assessment.

The Questions about the Phenomenon: Open Ended

The second factor influencing the choice of a research strategy relates to the questions proposed by the researcher. In this study, questions about the

effectiveness of a particular intervention entail further questions regarding how change or growth in specific language skills is reflected in overall language functioning. Some specific questions are: how do the children respond to the intervention strategies? What individual developments are evident and how do they relate to the context of the intervention program? An investigation of these questions requires more than a comparison of effect size: it requires a comprehensive analysis of the day-to-day dynamics of the intervention program, vis-a-vis individual language behavior and growth. For these reasons, a case study research strategy was chosen.

Case Study: Characteristics and Rationale for Use

Case studies are described by Yin (1981) as strategies which attempt to examine "a) contemporary phenomenon in its real-life context, especially when b) the boundaries between phenomenon and context are not clearly evident." (p.59). This approach seems well-fitted to the present study since language can only sensibly be viewed in context, and since description of the "why's" and "how's" of the language intervention are not predicted at the outset, but are expected to emerge during analysis.

Case studies allow for descriptions of phenomena which include complex, holistic, and integrated variables (Stake, 1978). This research strategy is distinct from other methods

such as experimentation or simulation. Yin (1981) notes that experiments deliberately divorce a phenomenon from its context, while simulations provide strict boundaries of analysis. Further, it is Yin's view that these alternative strategies cannot accommodate the myriad of variables that are naturally reflected in direct observations and which are seen as extremely valuable to the description of the emerging phenomena.

Types of Evidence

Given the type of research strategy selected, there are two major types of evidence which can be gathered - qualitative and quantitative. There has been, and continues to be, a debate over the merits of each type of data. Quantitative data are seen by positivists as more scientific and consequently less fallible (Howe, 1985). Hence, formal inductive generalization to other circumstances, based on statistical probabilities, is said to be possible. These data are typically numerical representations of specific manifested behaviors. Formal instruments or frameworks are utilized (Eisner, 1981). In contrast, qualitative data are seen by anti-positivists as far more rich, full, holistic, and "real" (Miles, 1979, p. 590). This perspective does not view generalization of findings as essential since the goal is to acquire greater understanding of the phenomenon. In this approach the research attempts to derive general from specific observations (Eisner, 1981). According to Eisner "[the qualitative analyst] is after explication" (p. 8). No

specific codification is typically used.

While both types of evidence appear to be at opposite ends of a continuum, there seems no good reason to prohibit a combination of these types of data in a single study. As Howe (1984) notes, "the differences do not constitute sharp, uncrossable dividing lines" (p.10). Therefore, forced choice between the types of data is unnecessary. It is assumed in this study, therefore, that both quantitative and qualitative data can be incorporated in order to provide a range of evidence about, and a variety of perspectives on the effects of the intervention.

Data Collection Methods

Data collection methods may vary from ethnographic, to observational, to standardized tests (Yin, 1981) or to physical scientific measurements. Given the argument for nonstandardized language assessment procedures presented earlier, it was believed that ethnographic collection methods would yield the most ecologically valid data (ie. a true representation of language use and growth). There are many benefits to these approaches.

First, ethnographic collection methods allow for patterns and constructs to emerge naturally from the data (Miles, 1979) by suspending knowledge (Wilson, 1977) or any a priori hypotheses. Bloom and Lahey (1978) and Wilson (1977) refer to the "emic" nature of the phenomena to reveal itself, thus allowing the researcher to synthesize the patterns and "create meaning" (McCutcheon, 1981, p. 6).

(This would be in contrast to an "etic" plan where a "set of initial hypotheses or assumptions about what the regularities might be" are outlined and then compared to the actual observed behaviors (Bloom and Lahey, 1978, p.64). According to the emic/etic distinction, the phenomena are to be observed in a natural setting and from these observations interpretations are made that help to illuminate the phenomenon further (McCutcheon, 1981). Verbal and non-verbal behaviors are observed, as well as interactions between participants and between the participants and the researcher (Wilson, 1977). Affective components are sought as well as overt behaviors (Stake, 1978). Tacit knowledge (understandings gained from experience) become valuable in these interpretations (Stake, 1978). The researcher attempts to uncover components which often go un-noticed. According to van Manen, for example, "The world," according to Sherlock Holmes, "is full of obvious things which nobody by any chance will ever see" (1979, p. 549). To aid in this discovery, several perspectives are relevant, ranging from those of participants, to those of participant-observers, to those of the strict "objective" observer. As the observations progress over time, the researcher is free to modify questions, or to refine and test constructs. The end result is an accumulation of various digressions, analyses, and verifications. The data obtained are then organized into theoretical themes. This approach to data collection is both inductive and constructive (Wittrock,

1987). It is through these methods that the researcher attempts more clearly to understand human development and growth. The central rationale is similarly expressed by Densin when he states that

"The researcher who has not yet penetrated the world of the individuals being studied is in no firm position to begin developing predictions, explanations, and theories about that world " (quoted in Easley, 1982 p. 191).

A central contention in the present study, then, is that a case study strategy which utilizes both quantitative and qualitative data, and which involves gathering information via observational and phenomenological methods, will yield a more valid and a richer investigation of the effects of language intervention. The rationale is also consistent with the view of Greenfield (1987) when he notes that it is encumberant upon the researcher to "... use only those methods of inquiry that yield reliable or truthful knowledge" (pg. 27).

Having outlined the rationale for the research strategy and methods, the specific procedural details can be presented.

Methods

Subjects

The Cimorell Strong language facilitation program is intended for preschool age children, and so the subjects

chosen for this study were in the four to five year old age group. These children were similar to the school age learning disabled population and were assessed by a certified psychologist as having average intellectual ability, but as being one or more years delayed in other specific developmental areas (fine motor, gross motor, general comprehension, or academic readiness). Specific subject characteristics were to:

1. be in the age range of 4 - 5 years old
2. have average intellectual ability, as determined by an intelligence test (40 - 60th percentile)
3. be one or more years delayed in development in one or more of the following areas, as determined by a standardized preschool inventory: gross motor, fine motor, general knowledge and comprehension, academic readiness
4. have been identified through other screening procedures to be delayed in expressive oral language (based on Alberta Childrens' Hospital Speech/Language Pathology assessments) and
5. have no sensory, emotional, or cultural deprivation problems which impair learning.

Four children were selected from the current ACH Speech Pathology department case load who met these criteria and who were available for the duration of the study. A small sample size was in keeping with the case study approach utilized.

All parents completed a consent form for participation

in the study, by which they gave their permission to videotape their child in both the assessment and intervention sessions of the study. Home visits were planned for all of the children so that they could become familiar with both the researcher and research assistant prior to the videotaped pre-assessment.

Pre- and Post-Assessment Procedures

Nonstandardized descriptive measures were used to assess the expressive oral syntactic, semantic, and pragmatic abilities of each individual child at the beginning and end of the treatment. Frequency scores (converted to percentages) were compared using a randomized correlated t-test (See Data Analysis). Each child was videotaped for 1/2 hour in a spontaneous play situation with a research assistant prior to and following the treatment program. The half hour limit follows standards recommended by language researchers (Fujiki and Brinton, 1985; Miller, 1981; and Bloom & Lahey, 1978). Following these sessions, the researcher transcribed 15 minutes of dialogue from the tape (from minute 5 to 20). The first fifty utterances were then coded using the following procedures:

- 1) Mean Length Utterance (MLU), and Assigning Structural Stage (ASS) (form),
- 2) Type-Token Ratio (TTR) (content),
- 3) Dore's Conversational Acts Taxonomy (use).

Mean Length Utterance.

MLU is a general indicator of the syntactic complexity of a child's speech. To calculate MLU, the number of morphemes in each of the child's utterances was counted. "A morpheme is a minimal meaningful unit of language: for example *dog* or plural *-s*" (Miller, 1981, p. 24). For a complete list of counting rules, see Miller (1981). After counting the total number of morphemes, this number is then divided by the total number of utterances used in the count.

Brown's research (cited in Miller, 1981) has produced a table which compares MLU and chronological age to a specific grammatical stage (I - V). (See Table 1). "Each stage, although somewhat arbitrarily defined by MLU value, is associated with distinct development achievements and to this extent the states can be said to be qualitatively different from one another" (Miller, 1981, p.25). MLU and Brown's syntactic stage were noted for each child. However, since MLU ratio is only a general indicator, other syntactic estimation procedures were utilized to verify this assignment.

Assigning Structural Stage.

ASS is a means of confirming the MLU and Brown's Stage by noting specific grammatical and syntactic structures which have been mastered by the child, and those which the child is in the process of acquiring.

To determine the stage designation the utterances were examined with respect to 14 grammatical morphemes. (See

Table 1

Predicted Chronological Ages and Age Ranges Within
One Standard Deviation of the Predicated Value for each MLU

Brown's Stage	MLU	Predicted Chronological	Predicted Age
		Age	+ - 1 SD
Early Stage I MLU=1.01-1.49	1.01	19.1	16.6-21.8
	1.10	19.8	17.1-22.5
	1.20	20.6	17.9-23.3
	1.30	21.4	18.7-24.1
	1.40	22.2	19.5-24.9
Late Stage I MLU=1.5-1.99	1.60	23.8	19.3-28.3
	1.70	24.6	20.1-29.1
	1.80	25.3	20.8-29.8
	1.90	26.1	21.5-32.3
Stage II MLU=2.00-2.49	2.10	27.7	22.3-33.1
	2.20	28.5	23.1-33.9
	2.30	29.3	23.9-34.7
	2.40	30.1	24.7-35.5
	2.50	30.8	23.9-37.7
Stage III MLU=2.50-2.99	2.60	31.6	24.7-38.5
	2.70	32.4	25.5-39.3
	2.80	33.2	26.3-40.1
	2.90	34.0	27.1-40.9
	3.00	34.8	28.0-41.6
Stage IV MLU=3.00-3.49	3.10	35.6	28.8-42.4
	3.20	36.3	29.5-43.1
	3.30	37.1	30.3-43.9
	3.40	37.9	31.1-44.7
	3.50	38.7	30.8-46.6
Late Stage IV- Early Stage V MLU=3.50-3.99	3.60	39.5	31.6-47.4
	3.70	40.3	32.4-48.2
	3.80	41.1	33.2-49.0
	3.90	41.8	33.9-49.7
	4.00	42.6	36.7-48.5
Late Stage V MLU=4.00-4.49	4.10	43.4	37.5-49.3
	4.20	44.2	38.3-50.1
	4.30	45.0	39.1-50.9
	4.40	45.8	39.9-51.7

	4.50	46.6	40.3-52.9
Post Stage V	4.60	47.3	41.0-53.6
MLU=4.50+	4.70	48.2	41.9-54.5
	4.80	48.9	42.6-55.2
	4.90	49.7	43.4-56.0
	5.00	50.5	42.1-58.9
	5.10	51.3	42.9-59.7
	5.20	52.1	43.7-60.5
	5.30	52.8	44.4-61.2
	5.40	53.6	45.2-62.0
	5.50	54.4	46.0-62.8
	5.60	55.2	46.8-63.6
	5.70	56.0	47.6-64.4
	5.80	56.8	48.4-65.2
	5.90	57.5	49.1-65.9
	6.00	58.3	49.9-66.7

(Miller, 1981, p. 26)

Table 2

Stage Assignments for 14 Grammatical Morphemes

Stage	Morpheme
II	-ing plural in
III	on possessive
V	regular past irregular past regular third person singular articles a, the contractible copula be
V+	contractible auxillary be uncontractible copula be uncontractible auxillary be irregular third person singular

(Miller, 1981, p.28)

Table 2). The occurrence of each structure was counted (frequency) and a percentage (%) assigned which described the ratio of correct usages of each structure. The stage of usual performance was that which had the highest frequency count. This stage was compared to that which had the highest percentage (acquisition stage). The overall stage may vary somewhat from the stage of usual performance to the acquisition stage, providing further estimation of the syntactic development of the child's speech. The overall stage should be similar to the MLU stage assignment, as outlined above.

Type Token Ratio.

TTR (developed by Templin) is an estimation of a child's language content or semantic abilities. It is a ratio calculated by dividing the total number of unique words in fifty consecutive utterances by the total number of words. (See Miller (1981) for a listing of rules for counting words).

For example:
$$\text{TTR} = \frac{50 \text{ unique words}}{100 \text{ total words}} = .50$$

Templin's work has produced tables of approximate age related TTR ratios for children 3 - 8 years of age. A ratio of .50 was consistently found in a sample of 480 children, of all age groups (3 - 8), sex, and socio-economic status (Miller, 1981).

Dore's Conversational Acts Taxonomy.

Dore's scheme for coding conversational acts in pre-schooler's speech is very elaborate. He identified eight

general categories: requests, responses, descriptions, statements, acknowledgements, organizational devices, performatives, and miscellaneous utterances (divided into no answers, uninterpretable utterances, and exclamations). For the purposes of this study, each of the three miscellaneous sub-categories was counted as a class in its own right, making a total of 11 language function categories. Each category "differentiate utterances on the basis of form, function, semantic content, and conversational contingency" (Miller, 1981. p. 121). (See Table 3 for category definition and code).

While initial research matching conversational acts to chronological age has been undertaken, specific norms or estimated age ranges are not available. Therefore, the subjects in this study will be compared to themselves and the group in terms of category frequency (calculated into percentages). A change or development with respect to the function of language was noted.

To gather further data on the perceived degree of change in language development within each child, a checklist was distributed and completed by the parents, researcher, and research assistant. Upon completion of the treatment the checklist was completed privately, by each party. (See the Appendix for sample checklist).

Intervention Methods

The children were seen for 3/4 hour sessions, four days

Table 3

Dore's Conversational Act Categories

Category	Code	Conversational act
Requests for informa- tion, action, or acknowledgment	RQYN	Yes/no questions seeking true- false judgements about propositions
	RQWH	Wh-questions seeking factual information
	RQCL	Clarification questions about the content of a prior utterance
	RQAC	Action requests seeking that the listener do (or stop doing) something
	RQPM	Permission requests
	RQRQ	Rhetorical questions seeking acknowledgement from listener to allow speaker to continue
Responses to requests	RSYN	Yes/no answers supplying true- false judgment
	RSWH	Wh-answer supplying solicited factual information
	RSCZ	Clarifications supplying the relevant repetition
	RSCO	Compliances verbally express acceptance, denial, or acknowledgement of a prior action or permission request
	RSQL	Qualifications supply unexpected information in response to the soliciting question
	RSRP	Repetitions repeat part of prior utterances
Descriptions of verifiable past and present	DSID	Identifications labeling objects, events, etc.

facts	DSEV	Events, actions, processes, etc. are described
	DSPR	Properties, traits, or conditions are described
	DSLO	Locations or direction are expressed
	DSTI	Times are reported
Statements of facts, rules attitudes, feelings, and beliefs	STRV	Rules express rules, procedures, definitions, facts, etc.
	STIR	Internal Reports express emotions, sensations, and mental events including intents to perform future acts
	STAT	Attributes report beliefs about another's internal states
	STEX	Explanations express reasons, causes, and predictions
Acknowledgments recognize and evaluate responses and non-requests	ACAC	Acceptances neutrally recognize answers or non-requests
	ACAP	Approval/agreements positively recognize answers or nonrequests
	ACDS	Disapprovals/disagreements negatively evaluate answers or nonrequests
	ACRT	Returns acknowledge rhetorical questions and some nonrequests, returning the floor to the speaker
Organization devices regulate contact and conversation	ODBM	Boundary markers indicate openings, closings, and other significant points in the conversation, e.g., topic switches
	ODCA	Calls solicit attention
	ODSS	Speaker selections explicitly label speaker of next turn

	ODPM	<i>Politeness markers indicate ostenssible politeness</i>
	ODAC	<i>Accompaniments maintain verbal contact, typically conveying information redundant with respect to context</i>
Miscellaneous	NOAN	<i>No answer to questions after 2 seconds of silence</i>
	UNTP	<i>Uninterpretable for unintelligible, incomplete, or anomalous utterances</i>
	EXCL	<i>Exclamations express emotional reactions and other nonpropositional information</i>

(Miller, 1981, pp. 122 - 123)

a week for a period of four weeks. Although this treatment period is relatively short, it was believed that given the frequency, intensity, and small group size, important data could be gathered regarding the effects of this intervention.

Children met as a group at the Alberta Childrens' Hospital Speech/Language Pathology Department. Each session was videotaped for later analysis. The researcher followed the Cimorell Strong program format, introducing a new theme every 2-3 days. The topics covered were Cowboys/Rodeo, Communication, Parades/Music, Camping, Birthday, and the Farm. In each session, the researcher introduced the topic and provided hands on materials related to the theme. While the children played with the material in a prescribed manner, the researcher questioned the children, attempting to elicit the target responses, as outlined in the program. For example:

Lesson 1: The Farm

"What's in the bag?, Where is the shirt?, Who is behind the fence?" (Cimorell Strong, 1983, p. 29).

The probe questions were intended to focus on syntactic and semantic objectives such as,

"1. In response to Where?, What doing?, and Who? questions, the child(ren) will use elementary locatives, such as in, on, and under. These will be associated with the spatial relationship among objects in the following semantic-grammatical

constructions with 80% accuracy: Locative + (article) + Object, Verb(ing) + Locative + (Article) + Object, and Agent + (Auxiliary) + Verb(ing) + Locative + (Article) + Object. (Cimorell Strong, 1983, p. 27 - 28).

Pragmatic objectives were achieved primarily by setting up situations in which the children could demonstrate or practice a certain skill. For example, objective two from the Farm unit states,

"In response to questions, answers, comments, demands, etc., the child(ren) will demonstrate appropriate turn-taking behaviors in the form of attending, responding, when called upon, and volunteering to communicate (Creghead et al., 1980) with 80% accuracy" (Cimorell Strong, 1983, p. 28).

When the children were unable or reluctant to provide the target responses or language behaviors, the researcher utilized the recommended prompting, expansion, and commenting techniques. "For example, children at the one-word level of response will have to ask What? or Where? in order to get one of the clothing items. The child's utterance will be expanded ("That's right. What is in the bag?") and, perhaps, commented upon ("The shirt is too big for you")" (Cimorell Strong, 1983, p. 29). The author suggests variations in expansions and prompts for one and two-word response levels. Another recommended method of

prompting was to have the child repeat or imitate the teacher's utterance, as in "say `bouncing`".

Data Analysis

In keeping with the case study approach, the analysis reported varied based on the types of data collected. Quantitative data (ie. frequency scores (percentages) from pre- and post-assessments) were compared in order to determine effect size. Within subject comparisons were made using a randomized correlated t-test. Parent, researcher, and research assistant checklists were compared by arbitrarily numbering the responses (1- 4), and calculating interrater reliability scores using Cronback's procedure. Interrater reliability using the Pearson Product Moment Coefficient was calculated for the transcript coding which was completed by the researcher and research assistant.

The qualitative data were organized by child cases, and were comprised of the session running notes together with the additional comments made on the checklist forms by the parents, researcher, and research assistant. General notes regarding the overall effects of the program were also gathered, based upon comparison across cases, and overall participant observations. Finally, consistent emergent themes were identified, as well as possible contradicting evidence.

Quantitative Data.

Since the sample size was small and not randomly determined or assumed to be normally distributed, parametric and non-parametric statistical analyses were not suitable. Randomization techniques were necessary in order to analyze the data. Since the subjects could be randomly assigned to assessment times, providing experimental independence, this statistical procedure was deemed to be the most appropriate. Edginton (1987) outlines the criteria for subject independence in the following statement: "Two subjects are experimentally independent if one subject does not influence the measurement of the other subjects" (p.14). Since the randomization procedure develops a distribution by permuting the data repeatedly, comparisons can be based on the resulting distribution and not a predetermined statistical distribution.

A randomized t-test was calculated to determine the probability of scores occurring in each group. Scores from each of the three language components were analyzed in this manner (ie. MLU, TTR, Dore's Taxonomy). ASS and Brown's Stage assignment were not analyzed since they were utilized only as a means of confirming MLU.

Qualitative Data.

The analysis of qualitative data required significantly different methods than the quantitative data. In order to gain a richer perspective of the children and their language growth, the researcher endeavored to look beyond the

language frequency scores. The focus was on the childrens' more subtle reactions to the treatment and on the nature of their interactions with one another. Miles (1981) recommends recording qualitative data, such as this, through running notes and then attempting to identify specific themes. To do this more effectively, notes on each child's language behavior were grouped from parent's, researcher's, and research assistant's observations. Notes and comments relating to the overall program intervention were grouped similarly. Several sources of data (triangulation) are believed to improve validity and reliability of the findings (Goetz and Le Compte, 1984; Dawson, 1979). Consistent observations were also recorded and compared (Wilson, 1977).

The quantitative and qualitative data on each child and on the study in general were then compared and synthesized.

Further Considerations

It is acknowledged that in case study designs, several threats to reliability and validity must be accounted for. The most significant and recognized threats are addressed below.

Treatment effects are often confounded by extraneous variables. For example, developmental trends or maturation can effect the treatment results. This threat has been minimized because of the short term duration of the study. Likewise, the Hawthorne effect (heightened output due to the awareness of being studied or being involved in the study

(Neale and Liebert, 1986) is known to have influence on treatment results. This has some bearing on this study since not all of the children were familiar with intervention programs at the onset of the study. The effects of familiarity and comfort with the researcher were countered by utilizing an alternate individual (research assistant) for the assessment sessions. Ideally, follow up after treatment to determine longevity of the effects, or the use of a control group would be desirable. This was not possible, however, due to subject and time limitations.

In studies where the researcher is both observer and participant, experimenter bias is possible. Triangulation was incorporated to minimize these effects. The procedure was as follows. First, the researcher took notes immediately after each session, from a participant's perspective. Specific notes about the children's behavior, attitude, language use, and more generally about the coherence and flow of the session, were taken. After this, upon reviewing the video tapes, observer notes were made by both the researcher and research assistant. The researcher attempted to capture a different perspective in the second analysis. Rather than personal perceptions, the researcher attempted to identify overall trends in language development for each child and within the group as a whole. The research assistant's observations were useful in confirming/contradicting these impressions. Finally, parents, researcher, and research assistant completed

checklists and made general comments about the intervention. These checklists were complete privately by each party to minimize the experimenter's influence.

Interrater reliability, which had a significant bearing on the transcript coding, is another concern which was accounted for. Prior to the actual coding of the transcripts, the researcher and research assistant reviewed the coding procedures and applied these methods to sample transcripts until an acceptable overall reliability ($>.90$) was achieved.

Several environmental issues were also considered. There is often concern regarding the obtrusiveness of video tape procedures in research studies. This was an initial concern. However, it became apparent very early in the study (during the assessment sessions) that the children were oblivious to its presence. This was not considered a significant factor or threat, therefore, to reliability. As well, the study's setting was made very similar to those of routine intervention sessions in that a traditional classroom and furnishings were utilized.

Other potential threats to the validity of assessment procedures which were utilized have been discussed previously. While the realm of nonstandardized language assessment is still in the early development stages, rigorous observational procedures are now viewed as a central part of analyzing language behavior (Miller, 1981; Tough, 1981; Bloom and Lahey, 1978). Therefore, the data

provided by these measures are believed to be valid and reliable.

CHAPTER 4

Results and Discussion

In Chapter 3, a rationale was presented for the use of qualitative and quantitative data in the analysis of the phenomena. In order to evaluate these different forms of data, three methods have been utilized: randomized correlated t-test, interrater reliability, and a synthesis of the common themes identified in the researcher's and research assistant's running notes, and the parent comments. The combination of quantitative and qualitative data yields a stronger and richer examination of the phenomena.

Quantitative Data

The quantitative data was compared using randomized correlated t-test for the student data (Tables 4 and 5), and Cromback's system of interrater reliability for the parent/researcher/research assistant checklist data. Although the quantitative data do not yield optimally high significance levels, they do confirm the trends in language growth noted in the qualitative data. Interrater reliability for the student language assessment was found to be $>.90$. A strong relationship between parent, researcher, and research assistant observations and checklist scores was also found.

Table 4

Within Subject Comparisons of Pre- and Post- AssessmentScores (All language components) - Randomized Correlatedt-test

Sub.	Pre- and (Post-) Assessment Scores											P-value
	TTR	MLU	RQ	RS	DS	ST	AC	OD	NO	UN	EX	
D.	.46	3.32	17	19	17	14	10	4	3	11	2	.3105
	.437	3.84	13	21	17	17	5	6	3	7	3	
S.	.61	1.43	18	4	18	6	16	6	0	29	0	.5215
	.38	4.92	9	19	33	9	4	4	0	20	2	
T.	.58	2.88	6	23	11	2	13	4	15	18	7	.4551
	.37	6.00	23	13	22	11	3	11	0	10	7	
J.	.35	5.32	25	17	21	6	11	1	0	12	1	.4609
	.42	5.64	13	13	21	23	0	4	8	15	1	

Notes

Using the randomized correlated t-test yields probability values (1 tailed). t values are not reported.

Codes

TTR - Type Token Ratio
 MLU - Mean Length Utterance
 RQ - Request
 RS - Response
 DS - Description
 ST - Statement
 AC - Acknowledgement
 OD - Organizational Device
 NO - No Response
 UN - Uninterpretable
 EX - Exclamation

Subjects

D. - Daniel
 S. - Steven
 T. - Todd
 J. - Jennifer

Table 5

Between Subject Comparisons of Pre- and Post- Assessment
Scores - Individual Language Components - Randomized
Correlated t-test

Subject	Pre- and Post-Assessment Score	P-value
Category		
TTR		
D.	.46	.437
S.	.61	.38
T.	.58	.37
J.	.35	.42
		.8125
MLU		
D.	3.32	3.84
S.	1.43	4.92
T.	2.88	6.00
J.	5.32	5.64
		<.0001
RQ		
D.	17	13
S.	18	9
T.	6	23
J.	25	13
		.5625
RS		
D.	17	21
S.	4	19
T.	23	13
J.	17	13
		.3750
DS		
D.	17	17
S.	18	33
T.	11	22
J.	21	21
		<.0001
ST		
D.	14	17
S.	6	9
T.	2	11
J.	6	23
		<.0001

AC			
D.	10	5	
S.	16	4	
T.	13	3	
J.	11	0	.9375
OD			
D.	4	6	
S.	6	4	
T.	4	11	
J.	1	4	.1250
NO			
D.	3	3	
S.	0	0	
T.	15	0	
J.	0	18	.5000
UN			
D.	11	7	
S.	29	20	
T.	18	10	
J.	18	15	.9375
EX			
D.	2	3	
S.	0	2	
T.	7	7	
J.	1	1	<.0001

Notes

Using the randomized correlated t-test yields probability values (1 tailed). t values are not reported.

Codes

TTR - Type Token Ratio
 MLU - Mean Length Utterance
 RQ - Request
 RS - Response
 DS - Description
 ST - Statement
 AC - Acknowledgement
 OD - Organizational Device
 NO - No Response

UN - Uninterpretable
EX - Exclamation

Subjects

D. - Daniel
S. - Steven
T. - Todd
J. - Jennifer

Based on the comparisons of all three language measures taken globally, there appears to be no significant within subject differences in pre- and post-assessment scores. However, this overall failure to find a significant statistical difference does not necessarily indicate that there was no language growth over the treatment period. A closer analysis of the separate language components and the sub-classes reveals that the direction of change for certain language measures differs. For example, while the class of 'uninterpretable' utterances are expected to decrease, the 'statements' would be expected to increase. Therefore, the statistical within subject comparison provides little specific information regarding individual language growth in particular areas. It is perhaps more useful to examine the individual language component scores of each child.

Daniel showed small changes in language performance. The most noticeable changes are those within the language use component. He demonstrated slight decrease (percentages) in acknowledgements and uninterpretable utterances. Of these two changes, the decrease in acknowledgements seems to relate the most to the behavior and language developments observed by the researcher and research assistant. That is, as the treatment sessions progressed, Daniel became somewhat withdrawn and noncompliant. (See anecdotal notes). No other significant changes are evident from the raw data.

Steven's language scores seem to reflect the greatest

variability. While his TTR score decreased, his MLU increased substantially. The increase in the length of utterances was also evidenced in the observational data. Also important were the decrease in requests and the corresponding increase in responses. Perhaps this can be explained by Steven's reduced need to seek (request) affirmation and his growing desire to respond to the initiations of other speakers, and hence, to keep the conversation flowing. This does not explain however, the significant decrease in acknowledging utterances. The last area of change that should be identified is the uninterpretable utterances. At the beginning of the treatment sessions, Steven was mostly unintelligible. The observational data identify a substantial development in this area, as is reflected also in the raw data.

Todd also demonstrated some significant language changes in all three language components. The variety of different words used decreased somewhat, while the length of utterances increased greatly. This increase in utterance length was also noted in the observational data. Todd showed an increase in requesting, describing, statements, and organizational devices, which again was observed by the researcher and research assistant. Both the quantitative and qualitative data identify a radical drop in the no response behaviors.

Jennifer's language scores seemed to show the greatest development in the language use area. Her requesting

utterances dropped significantly. In terms of the observational data, this seems to correspond to the decrease in utterances seeking confirmation. The percentage of change in statements and acknowledgements seem to go in opposite directions and are difficult to explain.

In general, all of the children's language form, content, and use changed over the course of the treatment program. The statistical within subject comparison does not sensitively measure the change with the various language sub-components, however, a visual analysis of the data, as well as the between subject comparison on each language category, does demonstrate this. The between subject comparison illustrates significant probability values, confirming direction of trends in language growth.

TTR (Type-Token Ratio)

Three of the four children showed a decrease in the TTR (ratio of different words to total words). The degrees ranged from .02 to .23. One would have expected that the TTR would increase after the treatment program. Perhaps the decrease can be explained in part by the increase in words per utterance (in the post-assessment sessions) which would decrease the overall ratio score. For example (referring to the example on page 52), the total number of words may have increased from 100 to 150, while the unique words may have remained constant at 50. The TTR would then have decreased from .5 to .3 (50/150). Another possibility is that the degree of change is insignificant.

MLU (Mean Length Utterance)

The MLU (ratio of number of morphemes in 50 utterances) increased for all of the children. The degree of increase ranged from .28 to 3.49 years. This range corresponds to one stage change in Brown's chart of syntactic development. Todd's and Steven's scores showed the greatest increase (3.12 and 3.49 respectively).

Dore's Conversational Acts Taxonomy

Requesting behaviors decreased for three of the four children. Jennifer's and Steven's frequency scores decreased by 9 and 12 % respectively. Todd's score increased considerably (over 12%).

The changes in responses were split equally. Daniel's and Steven's scores increased, while Jennifer's and Todd's decreased. Of these, Steven's seem to be the most dramatic change (15% difference).

The describing category scores increased statistically for both Todd and Steven (11 and 14%). Daniel and Jennifer's scores did not change.

All four of the children showed an increase in the statement scores (ranging from 2 to 17%).

Acknowledging behaviors decreased for all of the children (from 3 - 12%), with Todd, Jennifer, and Steven showing the greatest reduction.

Three of the four children's scores on organizational devices increased.

The categories of no response and exclamations showed

minimal overall change. Todd's scores, however, did decrease in terms of not responding.

The other category which had significant change for one or more students, was that of uninterpretable utterances. both Steven and Todd had reductions of 8% or more.

Qualitative Data

As noted in Chapter 3, the qualitative data were gathered and grouped into specific themes - by child, specific environmental observations, instructor's perspective, and comments related specifically to the program's objectives and procedures. A synthesis of this data follows, including consistent and contradictory observations from the various sources.

Subject 1 -DANIEL P

Daniel is a 5 1/2 year old boy who comes from a family whose first language is French. He has one older sister. His file at the ACH indicates several years of intervention, including occupational therapy and speech/language therapy. Since the ACH became involved, the family has refrained from speaking French at home in attempts to develop Daniel's English skills. Language assessments reveal delays in expressive vocabulary, syntax, and classroom discourse skills. Upon meeting Daniel for the first time in his home, he was very shy and noncompliant. He hid behind a corner

and later the furniture, and when asked to come closer replied "No!". When asked a question by either of the researchers, he would ignore it and not answer.

The first three language sessions were administered with only two children, Daniel and Steven. Daniel immediately showed himself to be the more expressive of the two. He seemed less inhibited by the new surroundings than Steven, demonstrating spontaneity with his speech, ("The fire isn't out" and "What that?"), thus directing and controlling some of the interactions. He used language for informative and regulatory purposes. During the third session he quickly pointed out a name calling error, as well as questioned the researcher about calling them "love", as in "That's right love". He spoke in clear, complete sentences for the most part. In these first four sessions there was little to no incidence of noncompliance. Many of the interactions were noted to involve eye contact with the researcher.

The fourth and fifth sessions brought some language and behavior changes in Daniel. An older and taller student (Todd) joined the group. Daniel was noticeably more quiet during the beginning of the session, and physically sat back in his chair. During the hands-on activities Daniel was actively involved. Gradually Daniel began to speak more freely, almost competing with Todd. If one of the boys was given praise for saying something or in a certain way, the others would copy. Perhaps Daniel sensed an opportunity to be a leader, and consequently his language use and form were

heightened. During the fifth session, when Todd was noted to become more comfortable with the group, Daniel began to follow Todds' lead in terms of language and behavior. It seemed that Daniel's social status within the group affected his language use.

In some instances Daniel was able to provide vocabulary for the remainder of the group. Also, he was able to generate questions regarding a problem that the group was presented with. For example, when riding in a paper bus to the movies, he asked "How do we get in?". Daniel had no difficulty answering 'what', 'who', 'where', or 'how' questions. He could follow many directions successfully. Occasionally he would use one word responses, but when prompted to use complete sentences, he had no problem in doing so.

Daniel continued to want to share family experiences or his ideas. This was particularly true when the session was less structured. He demonstrated knowledge of telephone etiquette, and was interactive with Todd during this activity, showing eye contact throughout. As well, Daniel continued to contribute to problem-solving activities, by sharing ideas or solutions. He was able to imagine many situations within the structured theme.

His skill in using language politely was evident. He would wait patiently for another child to complete speaking before he would begin. Also, he had no difficulty in initiating or responding to requests to trade play items.

During sessions thirteen through sixteen Daniel's language and behavior took another turn. He had shared privately with the researcher on two occasions the information that he didn't like his dad because his dad hit him. The researcher responded to these statements by saying such things as "Sometimes we get mad at our parents, but we still love them. Sometimes parents spank their children if they are misbehaving". It is questionable whether there was a situation of child abuse, but Daniel became very withdrawn in the last three sessions, which was about the same time that he shared his feelings about his father. Daniel did not contribute as freely or spontaneously. The non-compliance noted during the initial interview reappeared. When questioned or prompted to contribute, Daniel became very argumentative, was unwilling to share, attempted to control the entire play situations, and demonstrated a louder and harsher voice when relating with the other children. In certain instances, he said that he was pretending to be a father.

From the beginning of the sessions Daniel's syntactic and semantic skills were at a high level compared to the other children. As well, his pragmatic skills (etiquette to language function) were well developed and diverse. Overall, no major growth in terms of Daniel's expressive oral language skills was evidenced. Changes in behavior were noted which seem to have been related to the participants who were present, and the apparent home

environment which he described.

Subject 2 - STEVEN M

Steven is the oldest of two children in his family. He is five years old and his sister is 3. Developmental delays have been identified in language, fine and gross motor areas. As well, he has a moderately serious asthma condition. He is currently on a waiting list for treatment. No previous intervention has occurred. Upon meeting with the family it was observed that Steven's mother was very quiet and did not initiate interactions often. Her utterances were brief, with minimal eye contact. Steven's father was much more verbal. He disclosed to the researcher that his early childhood learning experiences were difficult because he was 'dyslexic'.

Steven was not frightened by the researchers when they visited his home. However, it was observed that during the home visit he did not interact much. For example when prompted to show us his cat, he picked it up and put it on the assistant's lap, then returned to his initial sitting position, eating his lunch in front of the TV.

During the first four sessions Steven was noticeably uncomfortable and uncertain of himself. He used minimal eye contact, often dropping his head when asked a question or when responding. When sitting in the small group discussion on the day that Todd joined the group (3 days following the commencement of the sessions), he sat quietly in his chair,

head down, playing with his hands, and swinging his legs. His utterances were mostly unintelligible. When questioned or addressed his behavior was echolalic, mimicking Daniel's utterance. Mostly he made one word utterances. When there were no preceding utterances for him to pattern after, the researcher had to repeat the directions or questions, and then prompt or model the response.

Major difficulties in semantics became evident when Steven was asked such questions as "Who did that?" "That was buttoned by who?". He responded by pointing and saying "That". By the third lesson Steven was able to repeat the modelled responses. However, when Todd joined the group in lesson four, he would ignore some questioning, perhaps fearing having to respond to the researcher's modelling or prompting. The demands both of the social setting and of the program objectives/techniques seemed to affect Steven's language behavior.

Hands-on activities allowed Steven to feel successful and have fun. During these activities Steven spoke more spontaneously, although mostly unintelligibly, and to no one in particular. At the end of each session the children were given time to play with any toys in the room. Steven became very animated, using many sound effects while driving toy cars. He did not, however, interact with Daniel: they merely shared the same play space. It appeared, however, that Steven's language improved somewhat in quality and quantity when favored activities were involved.

During sessions six through twelve, Steven began to show an increased ability to answer questions, although he was still delayed compared to the other children. When candy rewards were provided, his attempts were noticeably increased as well. In the instances when Steven was struggling to respond, the researcher would allow another child to respond, so that he would not feel too pressured. When the conversation was not structured around a particular skill, but on a topic which Steven had experience with, for instance the zoo, he eagerly contributed. As well, Steven began to ask questions spontaneously, or to seek help. For example, when he was given money for the bus ride and had no pockets to put it in, he pointed this out to the researcher, in an attempt to seek help for his problem.

Steven also showed increasing ability to pretend and verbalize his ideas. For example, when he was the bus driver, he pretended to stop the bus, and then told the others it was time to get off the bus. Steven's use of various functions of language seemed to expand to include informative, regulatory, and imaginative purposes.

Structured questions continued to cause Steven problems, as noted when he simply parroted back a question, instead of responding to it. He showed an increased ability to model the researcher's prompt however.

The last four sessions provided continued growth in language use for Steven. He continued to initiate some topic discussions. For example, he told the group about

going camping. As he became more comfortable in initiating topics however, it seemed he was unable to gauge the appropriateness or relatedness to current topics. Also, he seemed to persevere on his own generated topics, unaware of a topic change.

He began to respond to 'what' questions, as in 'what do we need for the birthday party?'. 'Why' or 'who' questions were still difficult. In some situations he clearly knew what the gist of the question was, but was unable to retrieve or express himself, and opted to point instead, or would change the topic.

During the question and response dyads, Steven showed a slight increase in eye contact. He demonstrated far more eye contact during spontaneous play or speech situations.

Steven's asking behaviors also continued to increase. He asked questions of the researcher and also showed signs of asking appropriately, with the members of the group. There were instances, however, when he would take toys, scissors, or other objects before asking, and only demonstrate asking behavior when prompted.

He began to work more cooperatively with the other members of the group, particularly with Daniel. During the 'camping' theme, he initiated preparing the food, and encouraged Daniel to help him. Later, they played with toys inside the tent. In this instance the room setting helped to promote talk and play.

During the spontaneous play situations Steven's

egocentric speech became more intelligible, and often it seemed that it was not intended solely for himself. For example, when preparing food he said 'I'm making dessert. I'll help set up the tent'.

In general, it seemed that Steven's language behaviors changed the most of all of the subjects during the course of the intervention. He became more confident and willing to contribute and control conversations, expanding the use of language functions and the social graces to accompany these uses. Semantically, he began to verbalize more descriptive words and could respond better to questions. His sentences became clearer and more extended.

Subject 3 -TODD B

Todd is the older of two children in his family. He is 5.11 and therefore is the oldest subject in the group. Todd is more mature and accustomed to group settings and structured teaching/play activities. Todd is noted to have experienced some developmental delays in language use and content, gross motor coordination, and the ability to focus his attention. Because of the family's concern over Todd's attending problems, he was prescribed Ritalin (a drug used to settle hyperactive and attention deficit disorder children). The drug was administered only on a test basis. Todd was not receiving the medication during the research project. A home visit was not made with Todd's family due to time conflicts. Todd did however, join the group readily,

with few apparent fears.

Todd's pragmatic deficits became apparent during the pre-assessment session and the first few sessions of the language intervention. Todd would frequently fail to respond to requests or initiatives made by the teacher or the other students. Even when repeated, Todd would not respond. Occasionally when he was referring to something in the room, he would point to it, but not label it verbally. When Todd was pressured to respond to a question, he often used one word responses.

Todd's knowledge of structured teaching situations became apparent when he put his hand up when he wanted to speak. Also, during the free play time at the end of the session, Todd had interest in several toys, not just the cars, as the younger children did.

After two days with the group, a new student, Jennifer, joined. Interestingly, Todd immediately began to show more initiative in starting conversation, as well as using more elaborate sentence structure and vocabulary. Todd explained to Jennifer exactly how to plant the bean seeds. Also, Todd began to ask unprompted questions. As the format of the sessions changed to become more open ended, allowing the children more creativity and responsibility, Todd showed an increase in expressing suggestions or solutions. He would spontaneously add comments about topics related to his own experiences. At times, however, his comments were not related to the topic being discussed. Throughout these

increased oral expressions, Todd would frequently use 'baby talk'.

Although Todd's language behaviors changed throughout the intervention, it is questionable whether the treatment was the variant responsible or whether Todd is simply unresponsive to unfamiliar people, and therefore tests poorly on pre-assessments and shows limited language use until he becomes acquainted with new individuals.

Subject 4 -JENNIFER L

Jennifer is 5.3 and the youngest of six children in her family. The sibling next oldest to her is a very verbal, articulate and talented sister. Jennifer's mother mentioned this immediately, noting that this has caused some rivalry between Jennifer and her sister, that Jennifer feels inadequate at times, and that her older sister often speaks for her. Jennifer's developmental delays are in the visual memory, gross motor, expressive language form and articulation, and receptive language content areas. She has been involved in language/speech and occupational therapy interventions for approximately one year. Jennifer was visited at her pre-school prior to the pre-assessment session. She was extremely outgoing, asking several questions, and leading the researcher around the classroom, to the various centers. It was noted that Jennifer's language was often unintelligible because of her articulation problems.

Despite entering a class of three boys, Jennifer mixed into the group activities with ease. She was immediately spontaneous with her questioning, comments, or requests for help (demonstrating a wide repertoire of functional language), although these were directed primarily toward the researcher. She would make creative suggestions about where certain animal pens should be, or when and what to feed them. This spontaneity was reciprocated by Todd. It seemed that they were being stimulated by each other's language.

Jennifer was the youngest in the group, and although wise regarding pragmatics and vocabulary, she was also very immature at times. During the unstructured telephone conversations, she became very silly, and would use inappropriate language. For example she would hang up on the other person that she was talking with. As well, she became easily distracted if not actively involved in the group conversation, often preferring to amuse or play by herself.

In general, however, Jennifer was an imaginative contributor to the group. Although she did not often interact directly with the members of the group, her ideas quickly became a part of the sessions activities. Jennifer would use language to accompany her activity, describing (to no one in particular) what she was doing. When Jennifer became aware that the researcher was listening to her monologue she would seek redundant clarification or approval of some of her utterances. For example, "This baby, right?"

Near the end of the treatment sessions there did not seem to be a substantial change in any of Jennifer's syntactic or grammatical errors. Although she was able to model the researcher or correct an utterance when prompted, this was not generalized. As well, Jennifer began to resist questioning, modelling, or prompting. She would often ignore the researcher's 'empty' questions or utterance, which (although outlined in the program) seemed redundant or unnecessary to her. Jennifer's level of pragmatic functioning was reasonably high prior to entering the program. No major changes were noted in this regard during the treatment period.

Playtime

The children were involved in unstructured play both prior and following each language session. This playtime took place in the lobby of the Speech/Language Pathology Department, as the children awaited therapy or the arrival of their parents. These observations are included since they provide further insight or confirmation as to the language development of each child.

The most notable difference between the play situations and the language sessions was the children's spontaneous and imaginative play and language behaviors. In the play setting the children were much more physically active, often running, hiding, climbing and chasing one another. As well, they were loud (laughing or yelling), and sometimes

aggressive. They would play with one another, interacting, making up games or scenarios. For example, they frequently played 'house' or 'Hee Man'. The language used was natural and purposeful, although often abbreviated.

Some specific observations regarding each child were made. Jennifer was noted to play mostly with Steven's sister. She was very directive with the younger child, being extremely verbal and descriptive. This was similar to her language behavior in the sessions. Todd demonstrated quite different behaviors, particularly when his mother was in the waiting area. He was more aggressive, extremely impulsive and hyperactive, rarely settling into a quiet activity. He also talked 'baby talk' and ignored his mother's prompts to settle down. Steven was also quite different in this unstructured situation. He laughed and smiled, and sought interaction with the other boys. He made sounds when playing with toy machines, and was noticed to chatter to himself about his play. When his parents joined his play activities, he spoke very little with them, using one word utterances, or non-verbal messages, but desired interaction with them. Daniel was less active than Todd or Steven, often sitting beside the researcher, initiating discussions, questioning, and speaking in clear, sensible, full sentences. He was very candid, relaxed and open.

During the playtime the children behaved in natural and spontaneous ways. They interacted with one another, (in verbal and non-verbal ways), when necessary to achieve a

certain goal (ie. playing a game, questioning, directing). The interactions with the researcher were less stilted, more genuine and comfortable. A closer rapport was possible in this environment.

General Anecdotal Notes

Objectives and Method of Instruction.

Almost immediately after beginning the program the researcher began to feel uncomfortable with certain components and expectations of the lesson plans. The sessions seemed too structured because of the specific objectives which were outlined. In terms of syntactic/semantic objectives, the researcher felt compelled to ask the specified syntactic questions, even when the situation did not lend itself to the questioning, or when the prescribed probe questions were ambiguous or inappropriate. For example, one syntactic/semantic objective was to teach a response using 'if' such as "Your telephone will ring if someone calls you". The probe question was "When will your telephone ring?" This type of questioning was confusing to the children. Even after modelling the desired response, the children were unable to understand the nature of the question or the type of response sought. In relation to the pragmatic objectives, the researcher often had to contrive the situation in order

to introduce and rehearse them. For example, in order to teach the pragmatic skill 'excuse me' (used when walking down aisles in theaters) the researcher had to play the part of someone pushing down the aisle, bumping into people. Although the children found this to be amusing, it was not a skill learned out of a social need, as the program suggests and recommends. Further, there was little natural opportunity to practice refusals, providing information statements, protesting etc. (which were outlined in the text), given the structured nature of the sessions. The children responded poorly to the excessive structure and lack of spontaneity imposed as a result of the focus on the language objectives.

Initially the researcher demonstrated a very dominant position in the group, not with body position, but with voice control, questioning routines, and behavioral techniques. The researcher tended to use 'teacher talk', exaggerating words and utterances. ('Teacher talk' is a term used to describe the stilted, over exaggerated enunciation and expression that parents or teachers use when speaking to children (Chaudron, 1983). For example, during the first session, the researcher seemed to speak loudly, with unnatural enthusiasm and facial and vocal expression. This seemed to stifle the childrens' expressive oral language, intimidating and perhaps overwhelming them, instead of exciting or encouraging them to participate. As well, the probe questioning routines placed the control of

the language activity on the researcher. In addition, the behavioral techniques (modelling, correcting, reinforcing)³ drew the attention to the teacher.

It is suspected that the dominance of the language objectives, the behavioral techniques, and the researcher's initial teaching style resulted in limited group interaction and minimal group leadership, and resistance to the questioning and correction techniques.

Instructor Changes.

The researcher made three major changes during the month-long language intervention. The changes were made for two reasons. One reason was the children's apparent discomfort with the format. The second reason was the researcher's concern over the objectives. First, the teacher talk was diminished. The researcher attempted to use a more natural speech tone and volume. Secondly, the researcher modified the language objectives. The pragmatic objectives were either eliminated, or given a low priority, including them only when they could be naturally integrated into the session. The syntactic questions were asked less frequently and general comments were made more often. This seemed to allow more natural use of the children's language in relation to the theme or activity. Thirdly, the researcher attempted to be more open ended, allowing the children to solve their own problems, or develop their own play situations. The researcher asked probe questions which would facilitate thinking skills or awareness of language

use. For instance, in terms of cognitive thinking skills, the researcher encouraged the children to choose among alternatives presented, to discuss cause and effect situations, and to categorize information. Awareness of language use was promoted by the researcher saying "Tell me more. I don't understand" when an utterance was ambiguous. To stimulate the children's own ideas and language the researcher would say "How will you do that?" As well, each session began with a general discussion, not necessarily related to the lesson theme. The children's language was more spontaneous, filled with interesting vocabulary, and expressed with interest and appropriateness. The researcher was still able to model and correct language aspects such as grammar, syntax, and semantics, but did so based on the children's natural expressive language, not on their stilted responses to redundant teacher questions.

Subject Changes.

This new format did cause some problems, however. Since the discussions and activities were more open ended, the children's behaviors were often less controlled. They became more silly. Daniel in particular became more non-compliant. (This may also have been due to the problems that he said he was experiencing with his father).

As the sessions progressed the children clearly became more comfortable with the class routines and the expectations of the researcher. They also became more willing to interact with each other. Steven became

considerably more outgoing and spontaneous. His utterances became louder and clearer. Todd demonstrated less failure to respond. Jennifer and Todd began to correct themselves, particularly in terms of correct sentence structure and completeness of an utterance. All of the children began to use turn-taking skills more effectively, and pragmatic manners such as 'please' and 'thank you'.

During the first and last three sessions of the treatment program, only two children were involved; Daniel and Steven, and Jennifer and Todd respectively. It was noticed that the two children with the more developed language (Jennifer and Todd) were more capable of interacting with each other, generating creative solutions and ideas, and therefore reinforcing one another's language. Steven and Daniel (although less familiar with the situation during the first three sessions) were less adept language users and did not use their language abilities to communicate either between themselves, or for personal purposes. When Steven was amongst Jennifer and Todd, his language seemed to improve, perhaps because of their stimulation.

Implications of Program Modifications.

As stated, the treatment sessions did not strictly follow the program, as outlined in the Cimorell Strong text. The syntactic/semantic and pragmatic objectives were modified, as were the techniques of intervention. As is evident from the qualitative data reported previously in

this chapter, the modifications of objectives and techniques are clearly justified.

Although the language objectives represent all three of the language components, they are not truly integrated in a way that would support the program's goal of increasing overall communicative competence. The objectives actually caused a fragmentation of language, by concentrating on isolated skills. Furthermore, the presentation of these skills was often meaningless or unrelated to the childrens' activity or language expression. The "syntactic/semantic" objective of 'if', which was discussed earlier, is a good example of this.

A second major point which justifies the program modification was the childrens' apparent discomfort with the control and dominance required of the instructor. The behavioral techniques in the program lead to the adaptation of an authoritative role by the remediator. As noted, the children began refusing to respond to the questioning, prompting, and overall instructor control.

A third reason for modifying the program was the lack of effect that the behavior techniques had on the childrens' language development. The children were far more responsive to the natural, (in this case metalinguistic), discussion about their language. For example, instead of simply modelling or prompting a pragmatic skill, the researcher explained the purpose of the skill, often role-playing a situation in order to demonstrate the necessity of the

skill. The researcher felt that the children responded better and seemed to understand the language concept more clearly when there was some explanation given regarding the skill.

The above changes in program implementation certainly have a significant bearing on the results of this study.

Therefore, although it can be concluded that some language changes were evidenced in the children, (primarily in Steven), it is likely to be the result of factors other than the pure implementation of the cognitive language facilitation program. For example, one must consider the children's familiarity with the session routines and the researcher, the metalinguistic strategies employed, the severity of the language disorder, the spontaneous play situations which allowed natural remediation of language form/content/use, and the Hawthorne effect. (This factor can confound the result of the data since the subjects may automatically improve behaviors simply by being introduced to a study or by receiving some special attention. The increase in performance cannot always be traced to the intervention.)

CHAPTER FIVE

Summary and Conclusions

The data reported in chapter 4 require further discussion and explanation. In this chapter, the following aspects of the findings will be discussed: changes in each subject's language behaviors; instructor modifications and impressions; environment, setting, and methods of instruction; and methods of data collection and evaluation, noting suggestions for future research. Finally, the overall study will be reviewed in relation to the program claims and the current language and LD theory presented in Chapter 2.

Subject Response

Of all the children, Steven showed the most change in language behavior in the pre- and post-assessments, observational data gathered, and parent/researcher/research assistant evaluation checklists. Why did he show the most change? One possible explanation is that he was clearly the most delayed of all the children and therefore, that he had the most room for movement toward the mean. A second possibility is that he simply reacted positively to treatment. Since he had not been involved in any other intervention programs previously, he may have reacted to the novelty of the situation, rather than to the type of

treatment itself. A third possibility is that the language intervention did indeed influence his language behaviors.

In contrast, the other children showed much less growth. This may be due to the fact that they were less delayed than Steven, that they were less influenced by the novel situation, or that the intervention was simply too short to demonstrate a significant change. Despite the minimal change noted in the pre- and post-assessments, qualitative assessments revealed that all of the children seemed to be more conscious of their language use during the intervention sessions.

The children's pragmatic skills showed the most change, particularly in terms of clarity and length of utterance, initiation of discussion, and describing and stating behaviors. It would be interesting, however, to assess (qualitatively and quantitatively) these skills in other settings to determine if transfer is evident.

A significant difference in terms of the general language behaviors of the children was identified between the structured and unstructured settings (classroom versus waiting room). While the children seemed able to follow the program format of imitating and responding to questioning, their language use was much more natural and meaningful when used in an unstructured situation.

Two other observations to note are the children's ease with each other, and the benefit of having lower language users mixed with higher language users. Clearly, the

children were more verbal with one another as the weeks passed. Secondly, once Todd and Jennifer joined the group (the two subjects with somewhat higher language development), Steven and Daniel showed an improvement in language behavior. They copied appropriate responses as well as becoming more creative with their play and verbalizations.

Instructor Modifications

The impressions of the researcher (as instructor) and the resulting modifications to the program are also significant. Although the researcher was well aware of the format of the program (the methods of delivery) prior to implementing the program, as the instructor she was unaware of the impact that the intervention techniques would have on the subjects in the study. From the instructor's perspective, the methods seemed to control the behaviors of the children excessively. The extensive modelling and questioning seemed to hinder the children's natural expression of language. As a result, the instructor and children did not develop the desired rapport within the sessions. Further, the pragmatic objectives were extremely difficult to achieve. This should be qualified however, and not automatically be interpreted as a direct criticism of the program, since the intended pragmatic interactions may have arisen if the group had contained more subjects. Finally, the instructor began to include metalinguistic

statements spontaneously throughout the sessions. For example, when Steven made statements or asked questions which were ambiguous or unintelligible, the instructor would say "I don't understand. Tell me more." Another instance of metalinguistics was when the children would say something unrelated to the current discussion and the instructor would ask "Are we talking about that now? Could you save that until we've finished talking about _____?" The children seemed to respond readily to these metalinguistic statements. The instructor perceived that the children quickly became cognizant of the language expectations when they were specifically stated.

The switch to a metalinguistic approach is significant for two reasons. First, despite the children being language and learning disabled, they were still able to think metalinguistically. This indicates that they may be more communicatively competent than assessment measures may reveal. Secondly, the metalinguistic approach seemed far more natural and sensible to the children. By talking realistically to the children about their language behavior, they seemed more at ease with the instructor, and were aware that they had some control over the learning situation. In a sense, the metalinguistic approach initiated a natural dialogue between the instructor and children, that did not occur when the pure behavioral techniques were utilized.

Environment, Setting, and Methods of Instruction

The classroom which was used for the language sessions was a typical setting within the Alberta Childrens' Hospital. In general, it was not restricting or inhibiting the children. For example, the camera, which was set up in a corner of the room, was ignored for the most part by the children. On occasion, if they were playing close by it, they sought to view the TV screen. The room was also well equipped with a variety of toys and play stations. The children were curious and interested in the room for this reason.

Some aspects of the classroom did appear to impose constraints, however. The space was rather small for some of the activities. When the children were pretending to ride horses or set up camp, for example, there did not seem to be as much room as the children would have liked. It forced a close proximity, which restrained some of their imagination and seemed to cause some discomfort. In contrast, the lobby, which was very large and open, seemed to promote more exuberant and diverse play and language use. As well, it was noticeable that the classroom had a somewhat 'stifled' atmosphere when the children sat around the table. This brought more structure to the group, which may have affected the amount of natural language used. The instructor did, however, attempt to vary her placement and chair size at the table so that she did not set herself up to be the focus or dominant individual at the table.

It should be noted that these limitations within the setting seemed exaggerated by the stipulations of the program format. Had the program not required so much questioning, prompting, and topic delineation, the aura of structure may not have been as dominant.

Technical Aspects of Data Collection and Evaluation

In general the methods of data collection were varied and flexible enough to allow an in-depth analysis of the childrens' language and language growth. The pre- and post-assessments completed with the research assistant provided consistency, yet prevented confounding of the results due to familiarization. Technically, throughout the assessment and daily sessions, the camera could have been positioned closer or had a zoom lens so that the audio component would have been clearer, and therefore easier to transcribe. The videotapes were essential, particularly for the researcher and research assistant to review. The comments and insights made by the research assistant and supervisor proved to be very useful. Parent comments were also valuable. As noted, the qualitative data was extremely helpful in terms of generalizing and affirming the changes observed by the researcher/instructor.

With respect to the quantitative data, some modifications would have been beneficial. Regarding the language use component assessment device (Dore Conversational Acts Taxonomy), other sections which would

have categorized such skills as providing on-topic remarks, initiating topic changes, interruptions, or noncompliance should have been added.

Suggestions for Future Implementation

Based on this study, several format changes are suggested for future language therapy programs. It is acknowledged that some behavioral techniques (such as modelling, prompting, and reinforcement) can be useful in language therapies. However, the prompting and questioning should be minimized to allow a more natural flow between instructor and subjects. A metalinguistic component should also be added so that the children are clear as to the specific language objectives, so they can utilize their existing metalinguistic abilities, and to facilitate meaningful dialogue between the instructor and students. If the children in the treatment group appear mature enough, they could also review the video tapes with the group as a means of identifying appropriate or inappropriate forms or methods of language use. The children should be encouraged to question, seek clarification, or correct one another's language, as a means of solidifying their metalinguistic skills and promoting communicative competence. This is contrary to the prescribed approaches in the Cimorell Strong program, but is a truer reflection of current metalinguistic practices and communicative competence theory.

Since the program aims at cognitive growth through play

and hands-on activities, it would have been interesting to identify first the specific Piagetian cognitive level at which each child was functioning and then to reassess following the treatment program to determine growth across this domain as well. This would also be beneficial when planning or anticipating for the type of play in which the children would be expected to participate. Based on this level determination, the program could perhaps be geared more precisely to each child's developmental level.

The Cimorell Strong program outlines suggested topics for discussion. The children in the study were often not interested in the topic activities, withdrawing from the discussion or changing topics, preferring to discuss their own personal interests. They clearly sought semantic control of the discussions. Therefore, it is recommended that future interventions allow the topics to be those generated by the children. As well, the children should be encouraged to lead the activities or discussion, generating their own ideas and language. In doing so, the activities would undoubtedly become more 'hands-on', play oriented, flexible, and spontaneous. Furthermore, the instructor should facilitate thinking skills and problem solving, as opposed to assuming responsibility for developing or structuring play. In general, despite being language delayed, the children should be given realistic control of the learning situation, since, in this study, they have clearly demonstrated their ability to do so.

Another point to be noted is the need to make observations of the children in different settings (home, with familiar friends). The purpose of this would be to identify differences in any of the language components and how these differences influence the communicative effectiveness with varied audiences and in various contexts.

In summary, there are several criticisms of the Cognitive Language program. The first concern centers around the remediation techniques; those being the prompting, questioning, and modelling. Although these methods are useful in shaping the language behaviors of the children, their unadapted use appears to narrow the program and make it too behavioral in orientation. These techniques seemed to overshadow the underlying belief that cognitive stimulation through play and sensori-motor activity will be a base from which language can further develop. It seems, from the researchers' experience, that metalinguistic approaches can be incorporated, even with young children. For example, encouraging the children to use inner verbalizations before speaking out loud, was a useful metalinguistic strategy. For example, when the children seemed to have difficulty expressing their ideas, the instructor would encourage them to rehearse 'in their mind' before expressing their thoughts out loud. This clearly is not a component of the Cimorell Strong program, despite the contentions made about its focus on communicative competence. Communicative competence cannot be equated

solely with an increase in each part of language, but rather must be an attempt to capture the overall effectiveness of language as a social tool. This undoubtedly must include the child's thinking about his/her language and then being actively involved in the thoughtful modification and control of the language process.

The second concern relates to the objectives (syntactic, semantic and pragmatic). The semantic objectives are limiting in the sense that very little new vocabulary is incorporated. The pragmatic objectives seemed to be very forced, and at times did not seem to encompass all realms of language use (functional, pragmatic, or conversational strategies). That is, the instructor had to 'set up' situations so that the outlined pragmatic skills could be incorporated. Often this was very artificial. As well, many of the pragmatic objectives centered around language manners, and not other areas such as keeping the conversation flowing or staying on topic. In general, the semantic and pragmatic objectives did not appear to lend themselves to the childrens' communicative competence. The goal of the program should be refocused on communication as opposed to teaching language.

Thirdly, the program claims to be cognitive, in the Piagetian sense, yet, the sessions were so directed, that true cognitive development, arising from play, did not seem possible. While the sessions aimed for active involvement and manipulation, they did not encourage or provide for

internal mental manipulations such as organizing thoughts, reflecting upon a situation, or determining cause and effect. The hands-on activities could have been less directive and more open ended.

Fourthly, the topics, although clearly marked out, should be considered to be only a guide line and not to be the sole basis of the language intervention.

Finally, the program focus should be adjusted to reflect a more child-centered approach.

Conclusions

At the beginning of this thesis a historical review of language theories was presented as a means of supporting current beliefs and practices in language remediation. A return to this discussion is in order so that the study may be placed in this original context.

Historically, psychological thought has tended towards either of the two polarities empiricism to nativism. These two positions differentiated distinct beliefs about language abilities at birth. Empiricists, such as Wilhelm Wundt believed that humans were not born with any predisposition to acquire language. Nativists, such as Chomsky, maintained that infants had an innate ability to learn language. Out of these two polarized philosophies arose two major type of learning theory - behaviorism and mentalism (or cognitivism). Behaviorism in language was spurred on by the work of B.F. Skinner, who maintained that language behaviors

could be taught with stimulus-response regimes. Many of the behavioral approaches to language remediation focused on teaching syntax and semantics via reinforcement. Mentalism in language became prominent with the work of Piaget, who believed that internal mental structures could be modified and built from cognitively-based experiences which put the organism into a state of disequilibrium, and which consequently forced mental structures to change. Piaget also shifted the emphasis in language study away from syntax and grammar and onto semantics and language function. He was interested in how cognitive knowledge networks could be constructed and how language assisted in this development.

Vygotsky also reinforced the cognitive perspective on language use, elevating in importance cognition over syntax (form). Vygotsky believed that language develops essentially because of the need of the human race to communicate and to perpetuate itself, and therefore is used as a means of socializing the young who innately desire to communicate.

Current language perspectives share many of the beliefs from the early part of the century. However, the emphasis is now on the integration of all three language components (form, content, and use) in communicative competence. While cognitive development is still believed essential for language development to occur, adult mediation and purposeful communication is also viewed as necessary. Along with the above characteristics, behavioristic methods of

teaching specific language components continue to be reflected in current language remediation programs. This seems somewhat surprising given the emerging focus on communicative competence and how the individual learns to effectively utilize all language components for successful communication. As well, the literature is focusing increasingly on the metacognitive/metalinguistic methods of learning, emphasizing awareness of performance and strategy use to improve performance.

The questions posed at the beginning of the study were:

- 1) can a program which reflects dated behavioral perspectives (modelling, prompting, and reinforcement), as opposed to current metacognitive/metalinguistic strategies, truly affect the communicative competence of the LD population?
- 2) can enrichment of cognitive experience alone increase linguistic knowledge and communicative competence?
- 3) what significant changes in child behavior and attitude can be noted as a result of the language intervention?

Before addressing these three questions specifically, it should be reiterated that many factors can be identified which influenced the outcome of this study. They include the environmental/contextual variables, program objectives and techniques of remediation, social status of the subjects, comfort with setting and program expectations, group size, ratio of male to female subjects, ratio of higher language functioning subjects to lower language

functioning subjects, and instructor style.

Allowing for these factors, how did the program meet the needs of the children and the overall goal to improve communicative competence?

First a discussion regarding the traditional techniques of remediating the language components is required. The behavioral techniques (prompting, modelling, and reinforcing question responses) were effective and useful to some extent. The children responded to reinforcement and began to model the language behaviors of the other children or the instructor. The questioning, prompting, and imitation techniques became a hindrance however, instead of a helping strategy. The activities lost meaning and focus because of the adult questioning became the center of attention. As well, the adult became the director of activities, simply because of the responsibility for molding the children's responses. As a result, natural communication exchanges were limited and constrained. Finally, the remediation techniques were focused on isolated language components and not integrated into a natural, meaningful whole conversation. For example, the instructor's mandated role was to get the children to say sentences correctly, as opposed to ensuring that the children could adequately convey their intended meaning. It is critical therefore, that these techniques be minimized since they are essentially counterproductive with respect to the overall program claims and goals.

Secondly, the merits of the cognitive stimulation for increasing communicative competence must be addressed. Because of the over emphasis on techniques to modify specific language components, the underlying premise of cognitive stimulation for improved communicative competence became lost. The activities and situations were so controlled by the instructor that true cognitive exploration and linguistic creativity were difficult, if not impossible, to achieve. In order for a natural communicative situation to prevail, the format must be much more open-ended, incorporating questioning designed to facilitate thinking skills, rather than questioning for the purpose of responding in redundant syntactic/semantic forms. As well, at an upper pre-school level, a straight cognitive stimulation program may ignore the child's developing abilities to assess their own thinking and language use. This is related to the programs over-emphasis on behavioral techniques. Both the techniques and the questioning routines take the responsibility for language monitoring away from the child. First, such components signify the belief that the child's language will develop unconsciously. Secondly, it demonstrates that the modification of one's language must be adult-centered and adult controlled. While the LD and language literature is beginning to recognize young childrens' metalinguistic and metacognitive abilities, this program ignores them and therefore, neglects an excellent component and resource for language remediation.

The instructor and children in this study naturally became metacognitive and metalinguistic, despite the program, feeling more satisfied with the discovery of successful strategies for language use.

That is perhaps the most significant point to be made about this type of language intervention. While the goal is to achieve communicative competence, the child is not actively involved in awareness about their communicative competence, nor in the remediation of their communication strategies and skills. They are passive recipients. Yet, communicative competence means knowing what, when and how to say the things that you want to say, given the context and audience. It is questionable whether children can become a truly effective communicators if they fail or are never encouraged to understand how their language is affecting the situation that they are in, or the people that they are attempting to communicate with. Further, perhaps the child who is delayed in form and content is actually a reasonably successful communicator because he uses strategies which compensate for these disabilities. This may be said for all of the children in this study because they were able to communicate and play interactively with the others in the group, when in a relaxed, natural language exchange (playing in the waiting room), or talking with their parents. This may reflect a level of tacit knowledge of a particular language situation which may not readily be apparent during an assessment or structured language lesson. It also

clearly illustrates that even language disordered children can be competent communicators, given contexts in which they maintain some control.

Perhaps remediation programs that have the goal of improving communicative competence should not simply attempt to increase all language components, but rather should attempt to activate, generate and increase awareness of a range of effective strategies that can be used to achieve effective communication with some one or group, in various situations. If this is indeed the direction that language interventions are to take, one must ask whether behavioral techniques can have any place in this plan? Clearly, purposeful language use must be made truly central to such programs, rather than merely an idea to which lip-service is paid. The question for the future must be how these critical components can be integrated along with metacognitive/metalinguistic strategies into a relevant, engaging, and effective language program.

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APPENDIX

PARENTAL RESPONSE FORM

Now that the treatment portion of the research project is complete, it would be useful to receive feedback from each parent of the children in the study to determine if oral language skills may have improved in the family setting as well. Your response to the following questions, as well as any additional comments that you may wish to make, would help to validate or dispute the post-assessment findings.

Thanking you again for your participation in the study, and for completing and returning the Response Form as soon as possible. There is an self-addressed stamped envelope for your convenience.

Since beginning the study my child has:	NOT AT ALL	NOT MUCH	A BIT	A GREAT CHANGE
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become more
aware of his/her
language use

begun to talk
more often

begun to talk
more clearly

taken more
initiative in
starting
conversations

started to use
correct sentence
structure more
frequently

begun to use
a more varied
and expanded
vocabulary

shown more
turn-taking
behaviors
when speaking

been more
polite when
using language

What other changes have you noticed in your child?
These may be positive or negative changes.