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Longitudinal study of a deaf child

Jeanyce Feldner Holtz
The University of Montana

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A Longitudinal Study of a Deaf Child

by

Jeanyce F. Holtz

B.A., Carroll College, 1974

Presented in partial fulfillment of the requirements for the degree of

Master of Interdisciplinary Studies

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ABSTRACT

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A Longitudinal Case Study of Suzanne (129 p.)

Director: Sara McClain

The purpose of this study was to examine the first ten years of a deaf child who is, by all present evidence, successfully integrated into the hearing world in the public school system. Through a narrative of the developmental highlights of Suzanne's first ten years, it is hoped to acquaint the reader with the difficulties a deaf child has in acquiring the ability to communicate successfully and with the responsibilities of those in the deaf child's environment.

An in-depth study was made through formal tests, written comments of teachers, speech and hearing clinicians, a psychologist, and results of a socio-metric study of Suzanne's present capacities in vocabulary, language, academic achievement, and of her adjustment to her environment in the hearing world and an attempt was made to examine current research on the development of the deaf child in the above areas, in order to reach some conclusions about the aspects in Suzanne's environment that have been the most beneficial.

The conclusions reached in this thesis were that the predisposition for language development is inherent in almost every child including the deaf child, and that language acquisition is developmental and hierarchial, and that there is an optimal period of development between the ages of two and four years of age.

Academic achievement in deaf children correlates more closely with their language abilities than with their intelligence (Quigley and Frisina, 1961). This fact along with the early optimal period for the development of language puts a stress on the early intervention in order to help the deaf child achieve language.

Early intervention stresses early amplification, support from professionals to parents, a home intervention program, early placement in a preschool program, and a developmental or "natural" approach to language.

As the child reaches school age, intervention includes a great deal of assistance with academic progress, especially that progress that depends on the child's language ability.

It is also concluded that a deaf child should be helped to realize his/her creative and special talents in order that he/she become an interesting person to others and in order that he may develop a good self-concept.
ACKNOWLEDGEMENTS

This thesis was conceived as a project by my graduate committee as a means for assessing my ten-year-old deaf daughter's strengths and weaknesses in language and the academic areas in greater detail than had been done before in order that her future educational plans coincide with her needs. They also hoped that through research and a careful look at her environment from birth through both records and recall, that some indications for her apparent "success" as a deaf child in a hearing world might be discovered to benefit others.

I am grateful to my committee for this suggestion and for their support throughout the project. I have especially benefited a great deal during the study from the support and guidance of Sara McClain. Dr. Allen Pope from Carroll College, Helena, Montana, has also been a great deal of help to me.

I am also grateful to my family for their patience, especially my two daughters, Suzanne and Nicki who took many tests and to Suzanne for her willingness to be researched and written about. She remarked to me about half way through the project, "Mom, if you don't finish this before you die, I'll finish it for you."
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CHAPTER I
INTRODUCTION

At present, there seems to be a great deal of controversy and changing of trends in deaf education as professional people involved with our deaf children question their success, and often lack of success, in the academic world as well as in their social and emotional adjustment.

The median reading achievement score for the deaf at age 16 has been reported to be 3.4 (grade level). Other investigators produce somewhat higher figures but none reach 6.0 (Moores, 1970).

Because of this lag, and because with deaf students achievement correlates more closely with vocabulary and language ability than with intelligence test scores, emphasis turns to communication skills in deaf children (Quigley and Frisina, 1961).

The optimal period for the development of language is believed by researchers to be between the ages of two and four years of age (Moores, 1970). It seems imperative, then, to look at what should and can be done for deaf children during this age period. Emphasis seems to be on early intervention with amplification, parental home intervention programs and integration into regular nursery schools in order that the child might have as normal an environment and exposure to normal language and behavior patterns as possible.
Although it is concluded that there is a predisposition for language and that language acquisition is developmental, it seems that little is known about how a child acquires language. It was therefore considered important by such educators as Mildred Groht that deaf children receive the same kind of "natural" language input and experiences as hearing children.

Chapter III of this thesis is an overview of research in the areas of language development, academic achievement and social-emotional growth in deaf children as well as a description of an in-depth study of my ten-year-old deaf daughter.

Chapter II is a narrative of the development of the same child from birth to the present time.

Through the narrative, research, and actual assessment of her skills past and present, an attempt was made to find possible correlations between what research has pointed to as having a positive effect on the development of a "well-adjusted" deaf child and what actual tests showed about Suzanne's development into an apparently "successful" deaf child in a hearing world.
CHAPTER II
SUZANNE, BIRTH TO TEN YEARS: A NARRATIVE

Birth to Seven Months

Suzanne was born October 16, 1965, in Helena, Montana. Immediately after birth, she was carefully examined for birth defects as I had contracted German Measles just six months before.

The attending physician announced that Suzanne was a healthy child and that we need worry no longer. Her birth weight at full term was five pounds and ten ounces.

From birth, Suzanne was somewhat irritable and needed to be fed every three hours. Her grandparents' first view of her was a small, angry, red face with mouth open and yelling noisily with Suzanne elevated entirely on her arms.

After Suzanne was taken home, she continued to fuss a great deal with what the pediatrician thought was a milk allergy. At three weeks, she became covered with a fine rash much like what I remembered my German Measles rash to look like, but the doctor said it was probably her milk allergy. During her fussing, Suzanne was very difficult to quiet and I worried constantly about something being wrong with her.

At about two months, Suzanne began to respond a great deal to visual stimuli such as bright objects hanging above her crib and at three months, she would sit propped in a chair for a long period of
time and look at the Christmas tree. She began to smile and recognized both parents with a smile at this time. We were relieved that she seemed to be able to see.

At four months, Suzanne began to settle into a regular schedule and gave up her night feedings. And at five months, she was able to sit in her high chair, propped up with pillows at first, and watch the people and cars from our apartment window. She responded beautifully to people and we again believed that we could forget that she was a "rubella baby".

That spring Suzanne enjoyed many walks in her carriage looking at people downtown and the many attractions in stores and on the way. People remarked how "bright" she looked and that she "never missed anything."

Suzanne began to babble at five months and I would say "Mamamamama" to her and she would imitate me at this time. I would also nod my head up and down while changing and talking to her and she soon picked up this behavior. Her father was rather startled one day when he began to change her and she just lay there and nodded solemnly.

Suzanne seemed to enjoy being held and sung to at this time when she was restless and didn't want to go to sleep. Putting Suzanne down for a nap began to be difficult at an early age. She began to expect to be carried around to "look" at things both at her Grandmother's house and at her own.
When Suzanne was seven months old, we moved into a mobile home in the country beside a family with four children one of whom was the same age as Suzanne and beside another family with a baby just five months older.

We would put the babies on the floor to watch each other and it was again a relief to see that Suzanne was indeed as alert and active as the other two babies. She began to scoot and to crawl about, and by the time she was ten months old, she was able to pull herself up and walk around things.

At a year, Suzanne had not begun to use a few words as had the other two babies, but we were not worried as one baby was older and the other had many sisters and brothers talking to him. She did not begin to walk as they did either which we attributed to her "chubbiness" and to the fact that she didn't have far to go in our home to get the things she wanted.

Her grandmother got her a puzzle and we got her some stacking toys; we were delighted to see that she could put the stacking toys in the right order and, by fourteen months, she could put a simple puzzle together. Again, our fears were quieted about her not using any speech by the fact that she could do the same things that the other babies did and often, more.

During this time, Suzanne's grandmother began to worry about
Suzanne's hearing because Suzanne had not begun to say anything except to babble "mamamama" occasionally and because she had read that rubella babies were most often affected by deafness. But she did notice that Suzanne heard her cuckoo clock.

When Suzanne was sixteen months old, we took her to a nearby town to visit an aunt who was a teacher of kindergarten children. Leslie was amazed at Suzanne's ability to work the puzzles from her school and just as delighted at the first time Suzanne actually "took off" walking as it was in a store and she went after something she wanted to see. I looked down and she just wasn't there as she had always been, right beside me.

Leslie also noticed that Suzanne didn't respond when I called her name in the store and that Suzanne was still not using any words. She told us that she thought Suzanne didn't hear.

At home, the pediatrician again looked in Suzanne's ears and said that Aunt Leslie and Grandmother were just imagining things and that Suzanne's ears looked "just fine". But we went home and began to do some "testing" ourselves.

The two neighbor children had begun to put words together occasionally and had names for many things while Suzanne said nothing. We began trying to see if she would respond to her name being called as the older babies did. She did respond to the sound of her name being called and today can respond to her name unaided.
With our pediatrician's assurances and her responses to being called, we again quieted our fears, but not for long. Suzanne became ill and our usual doctor was gone, so we took her to a new pediatrician. He immediately informed us that she was either "deaf" or "retarded" because of her lack of speech and because of her high pitched cry. He referred her for testing.

Eighteen Months

Suzanne's hearing was scheduled to be tested by the State Audiologist when she was eighteen months old.

By this time, we were quite apprehensive about what the test results would be. When we were taken into the waiting room my fears were eased somewhat as there was a team of people waiting to work with Suzanne and to talk to me. They were delighted with Suzanne. She loved people and her curly head bobbed from one person to the other. She was small for her age but was walking and running well by then and her coordination and alertness were noted.

Suzanne was held in the audiology suite by a social worker while I was asked to show her toys and to keep her generally distracted as we watched for her reactions to the pure tone testing and words such as "Suzanne" and "mama".

When the testing was over, Mr. McGuire informed me that Suzanne had, he was quite sure, a very severe hearing loss but he quickly added that we could begin immediately with amplification and therapy.
He took us upstairs to meet the speech and hearing clinician who immediately began to play with Suzanne and encourage me with his remarks about her good "jargon" and obvious desire to explore and learn as she darted for the door labeled, "Surgery--No Admittance."

When we left the hospital, it was with sadness, but also with encouragement and a plan. We were to send for the John Tracy Clinic Correspondence Course for Parents of Deaf Babies and were to begin therapy as soon as she received her hearing aid. We also left without a realization of the struggles ahead; but many times such teamwork and encouragement have given us the needed courage to face these struggles.

**Two Years Old**

Suzanne received her hearing aid and immediately began trying it out on other people by putting it to their ears and yelling into it. She loved their expressions of amazement and soon we were able to put the aid on her each morning as we dressed her and to leave it there. We had begun to learn that, with Suzanne the less we made of things the better. She was beginning to have a very definite "mind of her own" about such things as dressing at all in the morning and going to bed at night, and we didn't want the same experiences with the hearing aid.

Therapy provided me with the same challenge as it did for her speech and hearing clinician. Her father began to call her "Ford"
after the TV commercial which stated that "Ford always has a better idea."

If Suzanne was a little difficult to handle at times, she made up for it in her attitude of wanting to learn and to explore. We began teaching her to use her hearing first by ringing a bell for her to come and find us and then by calling her name. After she seemed to be able to follow these, I began to have her match sounds I produced under the table to pictures or objects above the table. When she was about six months older, her grandparents, her father and I would play games to help her distinguish between our voices and to distinguish the direction from which the voices came. Much later, at three years of age, I began to use the book, What's Its Name, to help her learn to distinguish between one and two syllable words at first and then with more difficult choices.

Wearing the hearing aid never seemed to bother Suzanne until she was about six or seven, but people's stares were quite difficult for me at first. It was perhaps fortunate that Suzanne learned the importance of wearing her aid before she experienced an awareness of being stared at.

At two, Suzanne earned another title - "Eloise". "Eloise" was a song about a little girl that darted about chattering and exploring and generally making herself known to everyone around her. In the fall, we took Suzanne to an architectural convention in a large hotel;
she escaped to many places that she didn't belong and, each time, we could follow the "jargon" to the people in those places.

She soon knew her way into many offices and desk drawers that had candy in them at Shodair Hospital where her speech therapist was and learned to say "please" and "thank-you". One of the nurses told me, "Everyone knows Suzanne. She is such fun."

It was time to construct a fence around the yard. Suzanne was very upset at this boundary and screamed and shook the fence.

Suzanne began to be interested in matching concepts or objects to words and was progressing nicely in the Tracy Course at home and at the hospital each week. Her speech and hearing clinician planned her sessions to coincide with the Tracy materials at home. We began to make scrapbooks for him of Suzanne's favorite things as well as the words that she was learning to lipread and, in some cases, use expressively.

The books were very helpful when Suzanne wanted something that she was unable to name for use. We also had a book of places that we went most often and began to say, "bye-bye" and point to the place in the book that we were leaving for. This seemed to help ease apprehension in her.

Suzanne began to enjoy her therapy at home and at the hospital after a few months and began to understand about twenty or thirty words. We had been teaching her words in categories that she would
most likely be interested in such as toys, food, clothing, and animals.

The method used to teach new vocabulary followed a developmental pattern and was the method used by the John Tracy Clinic. It first matched objects that were alike in concept such as a red ball, a blue ball, a football, a tennis ball. When the child seemed to have the concept for the object itself, he/she was asked to match the object with pictures of the object, and finally just concepts with pictures of the object. As these activities were carried out, the word ball was used many times, and it was hoped that the word would be in the child's receptive vocabulary and perhaps in his expressive vocabulary by the time he had gone through the activities.

When we began to learn the symbols for animals, Suzanne was also taught the gross sounds that animals make and enjoyed this a great deal. We made a small barn for her and played with the animals for many hours, often after dinner with her father. She also acquired a dollhouse at this time so that she could begin naming furniture and organizing it into various rooms.

During this year, an itinerant teacher from the State School for the Deaf and Blind began to visit us. These visits were quite painful as they reminded us that Suzanne had such a long way to go that she might not ever have the "normal" life that we wanted for her. The teacher was very kind and brought us a great deal of information,
but the information was much more discouraging than the reports of
the speech and hearing clinician. It was very difficult at times to
know which way to turn. Other parents that we had come to know were
experiencing the same frustrations of not knowing what kind of ex-
pectations to have of their child and perhaps this points out the
value of a total child study team approach. Parents are filled with
many apprehensions at times such as these first years of knowledge
that their child is deaf.

With the teacher’s assistance, we began to use Cued Speech with
the hope that it would help Suzanne learn to lipread at an easier
pace. Cued speech simplifies lipreading by giving certain "cues"
with the hand at different positions on the face, to help the child
distinguish between those sounds that are so much alike that they make
lipreading difficult. Cued speech was not supposed to discourage lip-
reading because the child had to lipread sounds that were not dif-
ficult to distinguish on his own. It is to hard to know whether
cued speech helped Suzanne or not as she had begun to lipread some
words before we used it. We did think that it encouraged her to watch
my lips.

When Suzanne was twenty-seven months old, she contracted an in-
fection that required that she be placed in Shodair Hospital. The
oxygen tent was a terrifying experience for her as were the injections.
It was almost impossible to give her reassurance or comfort as she just held out her arms to be taken from the tent. After Suzanne could be taken from the tent, I resumed some of her favorite language games and brought her familiar pictures and toys and she seemed to not have as much apprehension. We were required to leave her each night, however, and this was difficult.

We were concerned that Suzanne's stay in Shodair Hospital would make her reluctant to return for speech and hearing therapy in the same building, but one of her adult friends had already prepared for her first visit with a doll and doll clothes that she could not resist and she returned willingly.

Suzanne was two and one-half when her sister, Nicki, was born. This must have been a very bewildering experience for her. When she was taken to the hospital to take the baby and Mother home, her face had an expression of total bewilderment. Before the day was over, she was saying, "Baby Gicky?", "Baby Gicky"? These were the first two words that she put together and more followed such as, "Gicky, nite-nite", and "Gicky, bye-bye?" At this time it would have perhaps been helpful for us to have known more about the normal development of language in children so that we would have encouraged this normal stage of development more than we did.

Suzanne displayed jealousy at this time by hurting Nicki with hitting or pinching at times or by insisting on "juice, juice, juice" or "cereal, cereal, cereal." when Nicki was being fed.
We continued therapy and her work at home each day and began to give Suzanne outings to reinforce the words she was learning. We took Suzanne to a farm so that she could see the animals that were in her books and hear how they really sounded. She loved the baby lambs and put her ear right on them to "hear" how they sounded.

Other trips were a little more difficult, such as the one on the airplane when she wanted to show everyone her pictures of airplanes and inform them, "airplane-yes-airplane."

Suzanne was observant of what everyone around her was doing and loved to imitate. She liked the telephone and would pick it up and use a great deal of jargon and laughter in having conversation.

In the beginning we had started working about fifteen minutes a day and as she became more tolerant of working with me, we added time. The key was to change activities often and to not become impatient when she wandered away for a few minutes. By the time she was four, we were able to work for at least two hours at a time, especially when we invited a friend to participate. At this stage, the time involved for me was often four or five hours a day with preparation and research time added to the time working with Suzanne. The professional people at both the Montana School for the Deaf and Blind and the University of Montana Speech and Hearing Clinic, were most generous in loaning me helpful books and journals.
Age Three Years

Suzanne was almost three years old when we completed the Tracy Clinic course. Her speech and hearing clinician who had worked so hard with her was going back to school and we were reaching a time when new programs and decisions had to be made.

The new speech and hearing clinician at Shodair Hospital referred us to the University of Montana Speech and Hearing Clinic as he decided that it was time for some good evaluation to be done on Suzanne's language progress.

Suzanne went to the clinic on her third birthday and for all of us it was a memorable birthday. We were again given a feeling of security and optimism as a team of persons comprised of an audiologist, an educational audiologist, and some students from the department evaluated Suzanne's hearing aid, her language and the program that we were using at home. The report from the visit said:

"October 16, 1968: She has worn this aid to good advantage and presently has a vocabulary of about 180 expressive words and 250 receptive words. Articulation is somewhat delayed (subjectively equated to that of a two year old by this examiner) but is progressing at an accelerated rate. Suzanne appears to be a purely oral child who is using her residual aided hearing and lip-reading well. Has begun to initiate sentences on her own. Advised placement in an ordinary nursery school." (University of Montana Speech and Hearing Clinic Records, 1968).

We also decided at this time to discontinue the use of cued speech as Suzanne seemed to depend on me more than we thought necessary and I was the only one using it with her.
Suzanne began nursery school two mornings a week shortly after our return home, even though she had not yet reached the requirement of being entirely trained. We had been too busy with language training, baby sister, and remodeling an old barn into a home to consider toilet training as a priority. Suzanne's teacher decided that she would learn to use the bathroom from the other children and, shortly after she entered school, Suzanne did just that.

Preschool did not seem to require an adjustment for Suzanne. She enjoyed watching and imitating the other children in play. The children were comfortable with Suzanne and seemed to have little trouble communicating with her. Darbyshire (1970) states that this type of school experience is beneficial for the deaf child as he learns the "normal modes of play and communicates as much as possible."

Preschool seemed to offer an advantage that we had not anticipated in that Suzanne seemed to be more tired at night so our problems with getting her to bed lessened. There were still some nights when I sat beside her bed for at least a half hour until she got the idea that we expected her to get into bed and stay until she went to sleep. We were only able to speculate that her problems with going to bed were caused by some jealousy of the baby and a desire for more attention or by the lack of being able to hear us about the house after she was put to bed as normally hearing children are able to hear their parents.
At preschool, I was able to observe the natural language patterns and vocabulary of the children Suzanne's age. It was by doing this that one of the language aspects that we had missed was begun. I noticed a child asking for the "toys" one day and realized that Suzanne had no symbols with which to categorize and perhaps did not even have such a concept. The importance of order and categorization will be further discussed in "Vocabulary Development" of Chapter III.

With the idea of categorization come the idea of putting pictures of the current season or holiday together on the kitchen wall to give Suzanne a further idea of the world about her. We began a calendar with her with pictures of current happenings and removed each day as it went by to give her an idea of the passing of time and of days, weeks, and months.

The calendar helped us a great deal one day when Suzanne came in the house and asked for an umbrella. No matter how hard we tried to use the right vocabulary, she could not understand that the stores were closed and that we would get one "tomorrow". Her father walked her to the neighborhood store to show her that it was closed, but this still did not offer the assurance that she sought that she would indeed get an umbrella like her friend, Theresa had. Finally, we had an idea. We cut a picture of an umbrella out of a catalog,
and placed it on the place on the calendar for the next day. We then said, "tomorrow". After we repeated putting the umbrella on "tomorrow" several times and shook our heads "yes", she began to understand. Abstract vocabulary was at times, very difficult to teach.

The rest of the house received its share of pictures in places that Suzanne spent any time such as over the bathtub and on the wall by her bed. We didn't want to waste any time by having nothing to "discuss" with her and we could do much better with some visual references. Suzanne learned prepositions partly from the nursery rhymes hanging over her bed as we said them and pantomined "over the moon", "over the candlestick", "sat down beside her" and "under the chair".

Experiences to encourage language were still an important part of Suzanne's training. It was during such an experience that Suzanne used one of her first complete and correct sentences.

We took Suzanne to the woods for a Christmas tree when she was just past three and had prepared her with pictures of a family cutting down, taking to town, and decorating a tree so that she knew what to expect.

Grandmother had packed a delicious lunch with hot cocoa and father had remembered her sled. It was a beautiful day in the woods and, as Suzanne knew what the tree was for, she was able to help us
choose one. We were walking down the road and she turned to both of us and said, "I just love you." It was not an original sentence as we had said it to her many times, and she may have not understood the exact meaning or syntactic structure, but she did know that it was something to say when she was happy and to make us happy from then on.

That spring we again visited the farm and brought home some fertile eggs to hatch as the pictures in one of her books showed. We brought in some branches with buds and watched the leaves come out. Many times we thought of how we had begun to take all of these things for granted until we had the opportunity to show them to Suzanne with her baby sister. We could only speculate that these experiences and our joy in them and in her gave her some of her delight for life.

Age Four Years

When Suzanne was almost four, we acquired a new member of our family, Charles Dog. Suzanne had seen a large dog badly hurt a small dog. As they fought, they had bumped into her and knocked her against the house. From then on, she became extremely frightened when she saw a dog and even refused to go outside if she thought there was one out there. We were unable to explain to Suzanne that not all dogs would bite. Our solution was to get Suzanne a dog that would
not bite, a puppy. Within a short time, our small terrier-type puppy had cured her fear of dogs.

Later, when Suzanne was better able to express herself, she told us of the time when a big dog knocked her into the house and bit her. In her mind, at some point, Suzanne had transferred the violence to the small dog as being done to her. We had been unable to understand this because of her lack of ability to tell us.

Suzanne entered preschool again, this time for three mornings a week and I was able to teach a few times and observe her with the children. Suzanne seemed somewhat lost at juice time when the children sat around a large table and visited, but she seemed to enjoy watching them.

I was amused, as was her teacher, at Suzanne's ability to remind me by pointing to the proper area or to the clock that it was time for music or "crafts". And I was pleased with her ability to follow directions during these times even though she was unable to learn the words to the songs.

Suzanne had earned the admiration of her classmates by this time, for her physical agility. The boys were particularly anxious to tell me, one day when I came to get Suzanne, that she could jump the climbing barrel.

We were fortunate at this time to have a friend who was a dance and gymnastics instructor who encouraged us to let Suzanne try some
lessons. Suzanne's imitative ability helped her with dancing and she seemed to especially enjoy the tumbling. We are pleased to have found an outlet for Suzanne's energy and emotions as well as something she might do well.

It was getting more difficult to interest Suzanne in sitting down daily to work with me, so I decided that she might enjoy having a friend come and participate. A neighbor child, who was almost a year older, began to come three afternoons a week and the three of us had "school". Mary's mother helped by talking to Mary as if it were a very special opportunity and by sending treats each time.

During these times, we used the calendar, the experience charts and booklets of the oral/aural method that I had observed teachers use at Central Institute for the Deaf in St. Louis, the SRA "Learning to Think" workbooks that her former clinician recommended to help Suzanne with abstract reasoning, and some number, color and language games. I also began to use a method devised by Krug (1965) to teach syntax.

Krug used words that were familiar in concept to the children and first taught them to read them. After the child was able to read a number of familiar nouns, adjectives and proper names, he taught them to read and understand "bring" and "give". The children were then shown how to "put sentences together" to get others to respond to commands such as, "Give Mary the blue car."
Suzanne seemed to enjoy and understand this game but was, as she had earlier displayed, not interested in learning to read many words. Earlier we had been encouraged to label objects in the house for her as we were told that deaf children should learn to read at an early age to help them with language. Suzanne did not seem interested in learning the written symbols for words so we did not push her.

Suzanne was given parts of the Illinois Test of Psycholinguistic Ability at the University of Montana Speech and Hearing Clinic when she was four years and four months old. We had established a schedule of visitation in order to get further assistance from the educational audiologist of about once monthly. Although Suzanne was unable to take the Auditory Association and the Grammatic Closure subtests, her mean scaled score was 34.7, near the mean scaled score of 36.0 established for a norm. This was perhaps because of her high score in the visual performance portions of the test.

Suzanne was still unable to use many complete sentences and I was looking for a more encompassing way of helping her, when I discovered the Distar Language I program. We began using it as a method of helping her experience whole sentences and of helping her understand the different types of sentences. The visual aids were becoming more and more difficult to provide and the time required to find or make visual aids was an important part of our decision to use Distar.
When we first tried to say, "This is a boy" in the first lesson, it seemed almost impossible that Suzanne would be ever able to use good, complete sentences. We began with clapping and saying, "a boy", then we said and clapped, "is a boy", and finally we got, "This is a boy." It was difficult to get Suzanne to go through the whole program as there is much repetition. We also tried to get her to use the constructions we were working on in our everyday experiences.

We can only speculate that Distar helped Suzanne over another hurdle, but she did begin to use and understand sentences during this year.

**Age Five and Six**

Suzanne was evaluated by the state audiologist, who reported, "This five year old youngster appears to have a great deal of language and I am sure within the average range for her age. Her articulation ability and voice quality are very good."

We decided to enroll Suzanne in a well-structured kindergarten in the neighborhood even though we knew that she was young and, in many ways, "not ready". She was able to go with her friend, Mary, and established some independence from us. The structure, we thought, would offer her the security of knowing what would happen next.
The first few months were very discouraging for Suzanne's teacher and for us when she said, "I just don't think she is getting anything out of this," "I don't understand her and she doesn't understand me."

Suzanne's papers and coloring work showed that she understood little, but we asked the teacher to try a little longer and gave her some information that we had obtained from the clinic about hearing impaired children in the classroom. I also showed the teacher the things that we were doing at home.

That year Suzanne's participation in class was below what the other children were doing, but soon we all realized that she was "getting something out of it".

Suzanne again began to receive help from a speech and hearing clinician when she was four and a half. The clinician spent most of the time in helping Suzanne learn to say consonant sounds and to associate them with the proper symbol. This coincided with what the teacher was doing in kindergarten and Suzanne was able to choose pictures that started with certain sounds just as the other children were able to do.

As Suzanne neared the end of her year in kindergarten, I began to realize, with the teacher, that she was not going to be able to enter first grade in the fall. She did not have the language ability to begin reading and understanding what she was to do for a full day yet.
There were two other hearing impaired children of Suzanne's age and one younger child who were in need of some kind of a program so the parents began to get together and discuss the possibility for a special resource room for their children. With the assistance of the director of special education, these parents were able to obtain the permission of the school board to ask Special Services to provide a program for our children.

Special Services personnel began by testing the children to determine what their abilities and needs were. We were encouraged by their responses to the results on the non-verbal portion of the WISC that was first administered.

Our optimism began to change as we were told that the entire staff would be there the following week to do further testing and to advise us on the results. When we arrived, there was only one clinician there who was only able to spend a short time with us. This was not the team approach to which we were accustomed.

During the summer, we were unable to receive any information on the progress of the program until two days before school was to begin. We received a letter at this time advising us that our daughter qualified for a new program called the "delayed language class" and that we must write and ask permission and give reasons for why she should be admitted.
The first day of class in the "delayed language class", was, perhaps one of the most discouraging and bewildering we had undergone. When we arrived for class, we noticed that there were six other children besides our hearing impaired children and that they ranged in age from three to seven. One mother greeted me with, "I don't know why my little boy is in this class. I guess they think he is slow."

The teacher, who had come to visit us during the summer, was a certified teacher of the deaf, and had not anticipated the children with other etiologies either. And that morning, two of the mothers of the hearing impaired children had to stay just to help the teacher keep these children, so different in ages and abilities, quieted.

Often, in the days to follow Suzanne's teacher would greet me with, "I just don't think I am doing anything for Suzanne with all of the circumstances present." And to further concern us, Suzanne was beginning to use some behaviors and noises that we had long ago discouraged and gotten rid of.

After conferring with Suzanne's teacher, we took Suzanne out of the "delayed language class" for a short time telling her that she could not return until she decided to behave better. When she returned to the "delayed language class", she returned for mornings only and went to her old kindergarten in the afternoon. With this change, Suzanne seemed to settle down and her kindergarten teacher
was glad to have another chance to help Suzanne prepare for first grade.

When Suzanne was five and one-half, we noticed that she was unable to understand teasing. We decided that it was important for her to be able to tease in order to cope with being integrated into a hearing children's world. We began by telling her ridiculous things like, "You sound like a kitty" when she would whine or "You look like a pig" when she had a dirty face. She would cry and become very upset until she discovered that she could make up funny things about her family and that we could all laugh about them. Suzanne has an uncle whom she has since learned to tease with a great deal and her sense of humor has been fun for us all.

One day when she was feeling upset about a friend at school, I unwisely told a joke that most children would not repeat at school. She immediately wanted to rush to school and tell all of the children.

"No," I told her. "That is a 'family joke'." I explained that there were certain things that you could laugh at within a family but not repeat at school or in public.

"Well, then", she said, "I can tell it to Brian and he can tell his family. It's a family joke, isn't it?"

After we explained that one, she insisted on calling her "Kuncle" (so named by her to shorten Uncle Kim) and her Aunt Sherry so she could tell them that it was a family joke.
Shortly after this, there was a picture of Suzanne in the paper in a folk-dancing costume that she had worn in a school pageant. She received a copy of it in the mail with a mustache painted on her face and the words, "A Family Joke" underneath. She laughed heartily.

Suzanne was ten when the "family joke" incident happened and had come a long way in understanding herself and others. Once her Grandmother asked her, "Suzanne, why do we tease you so much?"

Suzanne answered, "Because you love me."

Age Seven - Grade One

When Suzanne was finishing the delayed language class in the spring, we began preparing her to take the screening test necessary to enter first grade as her teacher felt that Suzanne was ready to enter regular classes in the fall.

When it was determined that Suzanne was ready for first grade, I was allowed to visit the neighborhood school's first grades in order to determine which one would be the most suitable for Suzanne.

Both first grades that I visited had what I decided were excellent teachers, but one used less auditory methods of teaching than the other and depended more on visual methods. She also seemed to use more structure. Since the structured situation seemed to work well for Suzanne in kindergarten and was the type of situation
most recommended by the educational audiologist and special teacher, it was the one we chose.

The principal of the school that Suzanne had been attending arranged for Suzanne to enter Central School in the fall and to be in the chosen classroom. The principal at Central School seemed somewhat reluctant to accept Suzanne as he believed that she would have a great deal of trouble learning to read with the usual methods of teaching, but he agreed to try her.

Our first conference with the new first grade teacher was most encouraging. She first told us that as Suzanne was now officially in first grade she wanted Suzanne to get along with as little help from home as possible. Her main objective this first part of the year was to teach the children to love to read. She also told us that she had a difficult time in understanding Suzanne but that she was sure that this situation would improve with time.

During the year, Suzanne did learn to want to read as well as to read quite well with the rest of the class. And the teacher who had had many years of experience with children, patiently handled most of Suzanne's difficulties while learning to understand her better.

At one time when Suzanne began postponing her work to do with mother at home, the teacher sent a note telling me to help her clear up the situation. By then, Suzanne had established some
friendships, and it took about two nights of having to do her work after school before she could play for her to decide to do her work at school.

The teacher's experience in teaching was very valuable in helping her understand Suzanne's capabilities. When Suzanne did very poorly on a reading test, the teacher decided to ask me to go over the next test beforehand so that Suzanne would have results comparable to her daily work. This helped us achieve the results that the teacher felt were more valid the next time and she entered these scores on Suzanne's record.

During her first grade year, Suzanne used a Phonic Ear auditory trainer at school instead of her own hearing aid. She was somewhat reluctant to wear it in front of the children at first, but the teacher had me come into the class and demonstrate the microphone and receiver to the children and when Suzanne could see their interest in and acceptance of the unit, she didn't seem to mind it as much.

Our work on the house had progressed very slowly up to this time because of our preoccupation with Suzanne and our care of Nicki. Having Suzanne around at all times when we wanted to work had been most difficult as she was always interested in "helping" and was always saying, "I'll goo--ee". Her father stated that everytime he needed a tool, "I'll goo--ee" had picked it up to use or that
everytime he drilled a hole "I'll goo--ee" had her finger in it.

It was decided that Suzanne needed a larger room in which to entertain her friends rather than the tiny one that she and Nicki shared downstairs, so we planned a new one for her upstairs. Her new room was very large and had a play loft with ropes and a ladder to climb up. It had a large desk and an easel for art projects, a sink, a bookshelf with an adjoining window seat for reading, a puppet theater, and costumes for dramatic play. Nicki shared the room too.

The room also has acquired a tumbling mat and a balance beam for the children to practice on as the children in the neighborhood are interested in gymnastics.

At this time, I preferred having Suzanne at home with her friends so that I could still help her with her relationships when they would play together. Her room has offered the children activities to do that Suzanne could best share in and profit from. Even the older children in the neighborhood have enjoyed supervising and putting on productions of "Little Red Riding Hood" with all of the costumes in the costume chest and at times the room resembles a theater with sheets hung from open beams for curtains and chairs lined up at one end for an audience.
When I attended the 1969 Alexander Graham Bell Association meeting for parents of deaf children, it was stated that it was the responsibility of the parent to make his or her deaf child's world or environment and person attractive to other children in order that the child enjoy a successful interpersonal life with others. It was speculated by parents with older deaf children that it was about 90 percent the parents' responsibility to see that the deaf child was successful with his/her relationships with others. I have come to believe this as Suzanne matures.

The activities and relationships with the neighborhood children have been rewarding. When we returned from Disneyland after Suzanne's third year in school, we were delighted with a "Welcome Home Holtzes" sign in the front yard which the children had made.

Suzanne's father built a large tree house for her and for Nicki and their friends and got a great deal of help from the children and an occasional father.

Our home, which was a stone barn, is a landmark as it was occupied by a famous Montana artist at one time. It is often a stopping point for tours because of these two factors. Suzanne meets many people in this way and loves to conduct the tours. Perhaps her favorite visitors were some Japanese governors' wives. She remarked after they left that she was glad that she didn't have to learn to lipread Japanese, however.
Age Eight - Grade Two

Before school started that fall, we took Suzanne and Nicki to Calgary, Alberta to see a zoo and to Heritage Park, a reproduction of a turn-of-the-century small town.

Heritage Park was delightful as the old farms, houses, shops, including a blacksmith shop and bakery, all had older people who had once lived in such an environment and were there to talk to the children and demonstrate their occupations.

In the old school house, Suzanne and Nicki were invited in to sit in the desks where children their ages would have sat for their grade in school and the teacher explained about a one-room school.

We emphasized many times, "This is how it was a long time ago." This experience was one that Suzanne often referred to such as "Did that happen a long time ago when people lived like they did in that old town?"

Suzanne and Nicki had never seen a zoo and were delighted with the Calgary Zoo. This zoo offers two learning experiences in addition to the usual animals: (1) an arboratum with a tropical and a desert life area with the birds and foliage typical of that area, and (2) a park with scaled-to-size dinosaurs for the children to read about.

Suzanne, who at this age, had become a source of steady questions, wanted to know which came first, dinosaurs or pioneers. So we made
a time line. These are the visual types of experiences and references that deaf children, perhaps even more than hearing children, need.

Suzanne is fortunate to have grandparents who travel a great deal. Since she has been old enough to follow their trips on a map, they have been to Norway, Mexico, Hawaii, Tahiti, New Zealand, and Australia. They are good sources of first-hand information and she enjoys their cards and the slides when they return.

Their last trip coincided with Suzanne's social studies lessons on Hawaii, Tahiti, Australia, and New Zealand and Suzanne was able to take picture postcards with pictures of the things that they were studying about and a sheepskin from New Zealand and some necklaces of shells from Tahiti to school.

In the second grade, Suzanne was, again, able to progress without much assistance at home.

Suzanne's teacher was somewhat apprehensive about having a deaf child since it was her first year of teaching, but was interested in knowing as much as I could tell her about deaf children and their problems in the regular classroom.

The teacher was consistent with the use of the Phonic Ear and when visitors entered the classroom, or when Suzanne went to another classroom, the person speaking was asked to use the Phonic Ear.
From the beginning of the year, the teacher sent Suzanne on errands in the school so that she would gain the experience of having to be independent and of having to speak to other adults.

As the year progressed, the teacher noticed that Suzanne was beginning to take advantage of the other children's consideration of her. While Suzanne was on an errand, she spoke to the children about helping Suzanne too much for her own good.

At one time, the teacher discovered that Suzanne had worked out a quite interesting system with the child that had been assigned as her "buddy" to help her understand assignments. Suzanne did the arithmetic and Melanie did the language.

It was very difficult to insist on Suzanne having specific responsibilities at home for two reasons: (1) she is a cheerful, willing child and does whatever she is asked to do and often offers to do more to help, and (2) again, there were priorities of encouraging friends or activities or reading or tutoring after school.

Suzanne took dancing lessons and art lessons while in the second grade. She was very good at copying what the teacher had for them to draw, but didn't seem to be interested in creative work in the studio or at home. She also had her priorities, and in the spring, was very reluctant to go to lessons because her friends were riding bikes in the neighborhood.
Suzanne has never seemed to enjoy doing things quietly by herself. She either wants friends around or she wants someone in her family to play with her. It is only possible to speculate that part of this is due to the fact that most of her waking hours in early childhood, were spent in learning and doing things with us.

At the end of her second grade year, Suzanne handed me a report card with many "E" "excellent" marks and happily announced, "My report card says that I am 48" tall!" Suzanne has always been more concerned with her size than with her grades in school.

It was decided that the years to come would be more and more difficult in school and that Suzanne would have to use summers advantageously so we arranged for her, Nicki, and me to move to Missoula for the summer so that she might have daily therapy at the University Speech and Hearing Clinic.

In addition to Suzanne's having therapy, I would be able to take some courses that would update my knowledge so that I might be better able to help her when difficulties arose during the school year.

During her summer therapy sessions, her speech and hearing clinician worked on many of the vocabulary concepts that Suzanne would have in the third grade in health, science, and language.
Age Nine - Grade Three

In 1974, the World's Fair was in Spokane, Washington. Since it was so close, we took the girls and their grandparents.

It was an interesting and fun experience for the children to see the costumes and people from other countries as well as their displays and pictures of their homelands. Suzanne asked many questions.

When school started in the fall, Suzanne's new teacher was unable to find her Phonic Ear, and by the time it was located, Suzanne had discovered it was more pleasant to not be bothered with it.

She was determined not to wear the Phonic Ear, so as had often happened at "crisis" times in the past, we called the educational audiologist at the University Speech and Hearing Clinic.

She advised us to write a contract in cooperation with the teacher, that agreed on a level of attainment that must be maintained until the end of the grading period. If at that time, the teacher was satisfied with her work, Suzanne could continue without the Phonic Ear.

We were hoping that Suzanne would decide that she needed the Phonic Ear, but this did not happen and she achieved the necessary level of attainment, so she did not wear the Phonic Ear again.

The teacher was alert to difficulties as they arose, and shortly after Christmas asked me to help Suzanne with vocabulary and
comprehension in reading and to go over the reading workbook pages with her before she had them in class.

Suzanne had been placed in the most difficult reading level in third grade in order to keep her in her regular classroom instead of changing to another teacher.

She was able to continue in this group with help at home. We put the vocabulary words on the kitchen wall and discussed them at meal times and worked on reading workbook pages and comprehension before bedtime each night.

From the first grade, she had been going to regular sessions once or twice a week with a speech and hearing clinician, but Suzanne began to protest this special attention.

There seemed to be three factors involved: (1) Suzanne was never quite sure when the therapist would come and was more and more upset about having to make up or miss out on classroom activities, (2) Suzanne was beginning to be more aware of being different and this was another way that her problem was pointed out, and (3) the therapy sessions most often didn't help her with her problems in class which were becoming most important to her.

It was decided by her clinician and us to discontinue therapy but to emphasize that she would be expected to begin again in the fall.
At the end of the school year, we realized that although Suzanne had accomplished at an average or above average level, that it was not as easily attained as in the two previous years. The fourth grade was viewed as a somewhat awesome landmark as it was the time when much new vocabulary would be introduced in content areas such as social studies and science and Suzanne would be expected to work more independently.

Because of the difficulties that might face us in the fourth grade the next year, it was decided that we should again go to Missoula for the summer where Suzanne could receive some help in advance with difficult vocabulary and concepts before school started.

Before going to Missoula for the summer, we surprised the children with a trip to California to see Disneyland, the city of Los Angeles, the beaches, and Marineland. The children enjoyed Disneyland perhaps the most, but the sea, the city and the sea animals and fish were sights they had never seen.

I spent a great deal of time in pointing out many aspects of the new experiences the children were having because I knew that many concepts were ones that Suzanne would be confronting the following year.

When I am pointing out objects or sights of interest, I always speak directly to Suzanne even though I am with both children, so
that she can take advantage of her lipreading ability. This is often difficult for Nicki who has expressed the feeling that I never pay enough attention to her on trips, or at home for that matter. I have explained that I speak to them both while looking at Suzanne because I know that she can hear me, but it is still a difficult feeling for her to overcome. Sometimes I am able to turn to both children and talk about the same attractions, but often this is not possible.

When we arrived in Missoula for the summer, Suzanne was asked to present our Disneyland pictures to a class on language for the hearing impaired child. Suzanne was more nervous than she had been at younger ages when she had done the same thing. This may have been due to her age at which children are often self-conscious or it may be that she is more aware of her speech and language handicap.

She did show her pictures and commented on them, however, and told the class about her family and home as well. She even informed them that, "Charlie Russell lived in our house. But he died in 1939, and then my mother moved in."

Even though Suzanne worked very hard with her clinician for the entire summer session, when it was over, we realized how much more material she would be covering in the next year. The previous year she had nearly gone over all of the new concepts for the third grade in one summer session, but now they had only been able to go over approximately one-third of the material.
They were able to prepare a presentation on wheat farming from pictures that we had taken of the Holtz family farm and Suzanne was most anxious to take it to school when the year began.

While observing therapy sessions, I was able to understand what Suzanne's clinicians had referred to when they said that Suzanne liked to distract them from the work they were trying to do with her. One day when I was observing her and the clinician was trying to help her understand the concept of the Fourth of July holiday, Suzanne asked her whether the United States was a girl or a boy. The clinician replied that perhaps the United States was thought of as a boy because we refer to our country as "Uncle Sam". Then Suzanne thought of other questions such as whose uncle Uncle Sam is and, "Why doesn't he ever change his clothes?" Suzanne has had so many years of one-to-one tutoring and therapy that it may be becoming more difficult for her to respond as she should.

Age Ten - Grade Four

When Suzanne began fourth grade, we were greatly encouraged by the facts that her teacher from second grade had been moved to grade four, and would be her teacher and that her speech and hearing clinician from the summer of 1974 in the University Speech and Hearing Clinic had come to Helena and was assigned to work with Suzanne.
The three of us had a planning session early in the year to decide which areas Suzanne needed assistance in and who would help her in each area.

Suzanne was especially having trouble understanding the sentences dictated to write for spelling tests. She would often hear words wrong or in some cases, did not understand because of a vocabulary problem.

Both the clinician and I worked with sentence dictation.

In addition, I was to help Suzanne with vocabulary and comprehension of concepts in science and social studies and the clinician concentrated on sentence structure, idiomatic expressions and the grammatical aspects of language that Suzanne was having the most difficulty with in her schoolwork.

A schedule was arranged to least interfere with Suzanne's time in the classroom and to keep a constant time that Suzanne could depend on. We arranged for the clinician to work with Suzanne two mornings a week from 8:30 a.m. and for me to work with her on the other three mornings.

This was a good arrangement as it allowed for Suzanne to receive tutoring early in the day when she was most alert and when she was most likely able to receive help for a test or special requirement for that day.

Suzanne was placed in the lowest achieving reading groups at the beginning of the year, again, to be able to remain in her homeroom.
The teacher became dissatisfied with the arrangement, however, as she felt that Suzanne could achieve on a higher level. Suzanne was placed in a higher achieving reading class with another teacher. But very shortly we realized that Suzanne was having problems in this class with the reading workbook. After consulting with the classroom teacher, the educational audiologist, and a consulting teacher from the Montana School for the Deaf and Blind, the following reasons for her problems were proposed:

1. The particular reading series that the children in this group was using was most difficult for deaf children because of the way it is written. It had many complex sentence structures and questions.
2. Suzanne had entered into a new environment with a new person to learn to lipread and had not had the advantage of doing the preparatory work.

It was interesting that when we spoke to the teacher in this group, she expressed some frustration with the series for all of the children. She said that they all needed a great deal of help to understand what the workbook, especially, wanted them to do.

It was decided to put Suzanne into an independent reading program for the remainder of the year. We were doing the difficult series at home in order to at least confront Suzanne with more difficult constructions when she has individual help available.
With the half hour of help at home each day, or most often, three days a week, Suzanne was able to achieve a grade average of "B" or above average work which her teacher pointed out is computed just as the averages of the other children's are and is quite high in comparison.

The classroom teacher was pleased with Suzanne's ability to stay with a task until it is finished and until she thinks it is done correctly. Her work habits in school have helped her a great deal. It is only possible to speculate that perhaps her early work each day on language helped her achieve an attitude of discipline in learning.

During this year, Suzanne's five years of dancing lessons, began to reward her with a great deal of enjoyment and a sense of achievement.

She was placed in an advanced tap class and in an advanced gymnastic class.

In the spring, Suzanne came home and asked to enter in the all-school gymnastic meet. We were somewhat apprehensive about Suzanne's dealing with the large number of children involved and with the formalities of the judging, but we agreed to let her enter.

We hired an instructor to help her beforehand, and she took Suzanne to the gymnasium where the meet was to be held and showed her where she would perform and how to present herself to the judges.
The whole family took Suzanne to the meet, but when we arrived, she had us drop her off at the back door so she could "warm up" and told us, "I'll see you later!"

It was difficult to sit there and watch and, for the first time when Suzanne was facing a new challenge, not be near enough to help or interpret for her.

Suzanne startled and pleased us with her poise and confidence in performing and amused us when it was time for the ribbons to be awarded. She came to us and said, "Tell me when they call my name for a ribbon." She knew that she had done well. And, indeed, she had, for she won first place in the advanced floor exercises for the fourth grade and second place for her performance on the balance beam.

Suzanne has reached an age when she must become more independent. She seldom relies on me as an interpreter except in situations when she is introduced and a name is difficult for her to pronounce or in church services or public speaking or performance situations where it is hard for her to lipread the persons when they are so far away.

In the cases of difficult names, we fingerspell to help with pronunciation. And when Suzanne needs interpretation in public speaking situations, we write an interpretation for her.
As it has always been, Suzanne's future is uncertain. She will be faced with more and more difficult scholastic challenges, as well as with the challenge of growing into adulthood in the very near future. As she matures, Suzanne will have to face more of her challenges alone.

Because of the courage that Suzanne has shown in her life in the past and because of the people that have helped her so much along the way, we feel that Suzanne has a good life to look forward to.
CHAPTER III
A PROFILE OF SUZANNE - AGE TEN

Introduction

Suzanne's profile (see Table 2.1) showed her to be small for her age, to be well-coordinated, and to have an above average mental ability.

Her speech and language skills were comparable to those of hearing children at her age, but the profile was unable to define specific areas of difficulty that Suzanne had such as a limited vocabulary, grammatical use of verb forms and abstract language concepts. And as reported by her speech and hearing clinician, in August, 1975, she "is able to correctly articulate all of the speech sounds, but sometimes omits final /s/ and substitutes or slightly distorts some of the more difficult sounds." These areas of difficulty are further discussed under the subheadings of Vocabulary Development and Language Development.

The profile showed Suzanne to be academically one year behind the expected grade level for her age in reading, arithmetic computation, and general information. However, Suzanne was performing according to grade placement and it is not unusual for hearing children to be placed one year behind when their birthdays occur in the late fall. Suzanne's specific academic strengths and weaknesses...
and their relationship to her mental ability and hearing loss are further discussed in "Achievement and Mental Ability".

Suzanne was socially well-adjusted and quite mature when compared to her hearing peers in the fourth grade. Many of them were nearly a year younger. "Emotional Social Adjustment" discusses social and emotional adjustment.

Chapter III was most difficult to write objectively because of my relationship with Suzanne. Therefore, the following precautions were taken:

1. The tests that were used to measure abilities were chosen because they had either previously been used by the Helena Public School System to measure Suzanne's abilities or by the University of Montana Speech and Hearing Clinic. Exceptions to this, were the Diagnostic Language Test, which has not been published for general use but will be available in the near future, and the Durrell Analysis of Reading Difficulty.

2. The tests were administered by professionals and their interpretations were used when possible or when the test scores did not speak for themselves. Exceptions to this were the Peabody Picture Vocabulary Test given at age 8-9, the Developmental Sentence Scoring at age 8-9 and 10-4, the NSST, the ITPA* at age 8-9, and the Durrell. It may be noted that when comparison between tests administered by the other professional persons a year after those given by me, such

*Northwestern Syntax Screening Test, Illinois Test of Psycho-linguistic Abilities

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Table 2.1. Profile of Suzanne, Age Ten

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<th>G.E.</th>
<th>A.E.</th>
<th>Chronological Age</th>
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<th>Weight</th>
<th>Motor Coordination</th>
<th>Mental Ability</th>
<th>Social Maturity*</th>
<th>Speech Development*</th>
<th>Language Development*</th>
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*Refer to page 47 for interpretation. These areas are most difficult to define as formal test results place Suzanne within the normal area of achievement in language and yet one perhaps could not say that Suzanne has "normal speech and language".
as the Peabody and the ITPA, the scores remain almost the same. This could be interpreted, perhaps, that Suzanne scores almost a year higher when tested by me and the reader may want to remember this when reading Chapter III. This may be partially due to her ability to better understand directions given verbally by a familiar person to lipread.

Vocabulary Development

Limited vocabulary has been a most difficult problem for Suzanne. Even now, when she has very little trouble in her "everyday expression" needs, or as her speech and hearing clinician stated in 1976, "her vocabulary seems adequate for animated expression", problems with understanding new vocabulary words or concepts often keep her from comprehending more formal vocabulary in subjects such as social studies and science, it seems. And in some social situations, such as when we told her not to show off some ribbons she had won in a gymnastics meet because she would make the children jealous, she did not understand the key concepts in the situation because of some of the vocabulary.

The problems with comprehension of subject matter are evident when tutoring Suzanne in content areas such as social studies. We read the material together and she is asked to write the answers to questions in the book. Writing the answers provides clues as to why questions are misunderstood. Suzanne seldom misses what the
questions are asking such as "who", "what", "when", or "where" and "why", but the key to her misunderstanding most often lies in the meaning of one or more words in the question or may be traced back to lack of understanding of an entire concept that is asked for because of a word meaning in a paragraph in the material. Suzanne's problem becomes even more frustrating to her when she is told to look up the word in the dictionary and the definition contains terms which are also unfamiliar to her. At least half of our tutoring time is spent in learning new vocabulary.

Suzanne's lack of understanding of social situations often lies in her vocabulary. In checking a letter that she had written to a child whom her family sponsors overseas, she had written, "I am sorry that you are so poor." We tried to explain to her that this might not be a kind thing to say because of the child's pride but Suzanne had a very difficult time understanding this because she was familiar with only one meaning of the word, "pride". She was acquainted with "proud" such as "I am proud of you because you did well", or "pride" in "I have pride in what you have done", and could not understand this new application.

Levine states that, "For a deaf child, words tend to have a more limited 'literal' meaning than for hearing children; it is therefore more difficult to open his mind to their wider implications in human behavior" (Lewis, 1968).
We have always been frustrated by Suzanne's slow progress in learning new vocabulary. In the beginning, it was difficult because she had to learn that everything in her environment, including things she could not actually see or touch, had names or symbols, but even after she understood this concept, progress has been often slow. We have noticed one factor, however. Words learned in situations meaningful to her were well remembered. Words learned because she needed them for her own use and asked for them, were better remembered.

In her book, *Natural Language for Deaf Children*, Mildred Groht emphasized that language taught should fit the child's needs and should be taught in meaningful situations.

Vygotsky (1962) may have stated a reason for teaching vocabulary in this manner when he quotes Tolstoy as saying, "Children often have difficulty in learning a new word not because of its sound but because of the concept to which the word refers".

Perhaps our deaf children lack experience with concepts, and therefore the words we try to teach them, have little meaning or relevance to them. Lewis (1968) stated that the deaf child lacks experience or concepts of experiences because, "the perceptual experiences may be less rich than those of a hearing child because he is not attracted to objects by sound or by people's pointing them out". This would also be true of his social experiences which,
according to Lewis are of three kinds: (1) a child's perception of the behavior of others; (2) his awareness of their attitudes towards particular patterns of behavior, and (3) his response to their formulation of principles of conduct (Lewis, 1968). By not hearing explanations and discussions of his environment a child may misinterpret much in his social environment. It is often said that deaf children are immature in their personal, emotional and social adjustments.

The Tracy Clinic Correspondence Course for parents of young deaf children cautions that much language must "go in" before we can look for expressive language. This is perhaps true of concept formation. Deaf children may need more opportunity to explore and develop concepts without a burden at all times of having language to learn with each experience. Furth states, "the young deaf child has non-verbal symbols, he has grammar, and he does not need verbal language for cognitive and personality development. He organizes his world, he memorizes his world, he stores his experiences and he can recall them" (Stark, 1974).

In the Piaget model of growth, thought and language grow independently of one another with thought preceding language and the two becoming more dependent upon each other as the child matures. Piaget described this period of growth as progressing from the sensory-motor stage when the child acquires object concepts, to a pre-operational stage when the child acquires a symbol system. The pre-operational stage then progresses to a concrete operational
system and finally to a formal operational period at about the age of twelve years when he is capable of abstract thought processes. (Tomlinson, 1974)

Watson (1969) quoted Pugh and Templin who have noted that it is often not concepts that trouble deaf children but the symbols in which the concepts are conveyed. Perhaps this is not in contradiction to Lewis and others as much as it is caution to teach concepts or to point out experiences with words that the child is already somewhat familiar with. One should also be aware of vocabulary that might be most readily grasped by a child of the chronological age of the deaf child to whom he is speaking.

We should be familiar with the vocabulary needs of normal children in order to help the deaf child learn a vocabulary that is most meaningful to him. Furth (1966) suggested that "it should be apparent that information (about the environment) could be conveyed by pointing, pictures, gestures, but the fact is that parents of deaf children are not encouraged to communicate information by these means." Perhaps parents are also too eager to teach new vocabulary and forget to use and reinforce old vocabulary when the opportunity for a new experience arises for the deaf child.

The Tracy Clinic Course method of beginning to teach vocabulary, fosters a "natural" or developmental approach as it teaches the parent to reinforce and teach new vocabulary, first by matching concrete
objects, then progressing to matching the object to pictures of the object, and then to matching pictures only. The symbol or word is used in all of these stages so that by the time the child has reached the ability to understand the concept of the object, he knows its symbol.

M. M. Lewis (1968) addressed himself to the concept of natural development of language from another viewpoint, "Successive stages of his (the child's) normal development are to be seen in the way in which a child, under our guidance, comes to classify the things in his environment as we do". "We must promote his (the deaf child's) awareness of order and structure, so helping to transform a chaos of experiences into something of a system of knowledge."

Furth stated that the deaf child has the ability to organize his world on his own but perhaps he needs our help in ordering it more as his hearing peers would do and in learning the proper symbols to do this (Stark, 1974).

When Suzanne was three, we noticed children of her age asking, "Where are the toys?" one day and realized that her world did not have this kind of symbolic order. We began to work with her by having her group objects into categories that she was already familiar with such as toys, furniture, food, and clothing and teaching her the symbol for each category. The idea of categorization was immediately grasped or as Furth suggested, was already there, but it took a great deal of repetition for Suzanne to learn to label each category with the proper symbol.
Sequencing of events through pictures was not as easy for Suzanne to do as was categorization. Perhaps this was because the sequencing required a reasoning process involving an inner language which she did not yet have. We began by using some of Suzanne's own experiences and letting her sequence pictures we had drawn or taken of some of her favorite ones. Experience charts with a picture representing each event and each sentence were put together as soon as she was able properly to sequence each separate event or picture.

Even with a concerted effort in Suzanne's home, by the public school teachers, and by Suzanne herself to learn vocabulary, she was still somewhat behind her peers in school, but not as seriously impaired as she might be with her degree of hearing loss, as test results to follow point out.

This effort involving the whole family, has given them a sense of closeness and purpose and at times a refreshing laugh.

We never lost an opportunity to point out concepts that Suzanne might otherwise miss. This was especially true when Suzanne was in a learning situation that she might not again experience. Such was the case when the family visited California and toured along the seacoast. Suzanne's mother was most anxious that she see the sea in all of its moods and that Suzanne notice such concepts as the quiet beaches, the bathing beaches, the harbors and the ships and must have
repeated herself many times. Finally, Suzanne turned to us and said, "See the sea. See the sea. I see the sea. See the ship. See the ship. I see the ship. See the beach. See the beach. I see the beach." We all had a good laugh and the family and the passengers on the bus continued on the tour in peace, or relative peace.

Teaching the deaf in this informal manner seemed the most natural and meaningful and the most effortless for the people involved, but as stated by Groht (1958) one should not be misled to think that it is a "hit-and-miss" situation. It takes a great deal of awareness of the language needs of children, of that particular child, and a great deal of cooperation and planning on the part of the persons involved with the child to make this method effective.

We were noticing at this time a more rapid acquisition or a more effortless acquisition of vocabulary. According to Schulze (1965), children with a hearing impairment, do increase their vocabulary at a more rapid pace at Suzanne's present age.

The tests used to measure Suzanne's present vocabulary were the Peabody Picture Vocabulary Test, which had been administered several times over a period of four years and the Diagnostic Language Test, formerly the Central Institute General Progress Test.
Peabody Picture Vocabulary Test

Hedger (1965) in Research in Psycholinguistic Studies of Deaf Children, showed that the Peabody could be used as a reliable measure of the receptive vocabulary of deaf children when used in written form and when age norms for hearing children are not used.

Hedger performed her studies at Lexington School for the Deaf and also did an analysis and eliminated items of inappropriate difficulty or those that failed to discriminate well between her subjects with high and low total scores on the test. She suggested establishing norms suitable for deaf children for the Peabody. A listing of retained items in their order of difficulty, is available upon request.

When Suzanne was given the PPVT, we were not aware of Hedger's studies so that she was given the test as it is standardized and the published norms were used. However, she was given the test in written form with little significant difference between the written scores and the scores for the test given orally especially at age 9-10.
**PPVT Scores**

<table>
<thead>
<tr>
<th>Chronological Age</th>
<th>Mental Age Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 7</td>
<td>4 - 2 (Form b)</td>
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<tr>
<td>6 - 2</td>
<td>4 - 7 (Form a)</td>
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<td>6 - 4</td>
<td>3 - 7 (Form b)</td>
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<tr>
<td>7 - 7</td>
<td>4 - 7 (Form b)</td>
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<tr>
<td>8 - 9</td>
<td>7 - 3 (Form b)</td>
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<td>8 - 9</td>
<td>8 - 11 (Form b)-written</td>
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<td>9 - 10</td>
<td>7 - 1 (Form a)-written</td>
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<tr>
<td>9 - 10</td>
<td>7 - 0 (Form b)</td>
</tr>
</tbody>
</table>

Results show Suzanne to have been consistently about two to two and one-half years behind her hearing peers in receptive language or vocabulary.

In comparing Suzanne to the deaf children in Hedger's study, she did quite well. The mean chronological age for the children was 13.5, the mean hearing loss was 87.8 dB, and the mean I.Q. was 112.4. Suzanne's hearing loss and I.Q. compared to the hearing impaired children is comparable but her age is three years and seven months younger than the deaf group at age nine years and ten months.

The mean mental age scores for the children in the studies was five years for the oral form and six years, two months for the written form.
**Diagnostic Language Test**

This test has been used at Central Institute for the Deaf for twelve years to measure progress in language development and growth in general knowledge.

We became interested in using the Central Institute test because of the ability to test language and knowledge growth from year to year, and because of the format of using questions. Much of Suzanne's schoolwork required that she read and then answer questions about what she had read.

We were grateful to Helen Woodward for her cooperation in sending a copy of the original test, as the standardized one is not yet available and for scoring the results and offering remedial suggestions. The remedial suggestions offered in the scoring of this test, are additional positive aspects.

The test was given to Suzanne by a speech and hearing clinician and will be also referred to under the subheading, "Language Development". Discussion here is limited to Ms. Woodward's remarks pertaining to vocabulary.

**Results**

Suzanne's spelling was weak in the test, according to Ms. Woodward. This was a result of her having picked up incomplete or incorrect words from lipreading or hearing incorrect or partial words which led
to vocabulary and spelling errors. (This did not correlate with
Spelling score on the Iowa Every Pupil Test of Basic Skills or the
Durrell Analysis of Reading Difficulty test. This was perhaps be­
cause of the nature of the vocabulary and the method of testing.)

Words we took for granted that Suzanne was using and/or knew
because we thought we heard her use them, often appeared different
when she wrote them or failed to recognize them in written materials.
An example of this appeared in item 13 of the test: "What would you
do if someone told you to hurt a small child?"

Suzanne's answer: "Don't do it. Just don't papane to someone."

Suzanne has been saying, "Don't papane (be mean)" for a long
time and was using entirely a different word to convey a concept
than what we thought we heard.

Ms. Woodward suggested having her write her answers and her work
to remedy this misunderstanding of words.

Other problems with vocabulary, according to this test, were
also evident in Suzanne's schoolwork. Suzanne had trouble under­
standing synonyms and homonyms. This corresponded with the state­
ment of Levine (1971) that words tend to have a more limited meaning
for deaf children. Perhaps the first meaning that they acquire is
the one that they tend to cling to (Lewis, 1968).

Suzanne had trouble with collective or mass nouns as indicated
by problems in the test. We believed that she visualized the
"pluralness" of such words as food, wood, or electricity as in the test because of her ability to list or categorize in these areas. The concept she seemed to have trouble with was the more grammatical one, "collective nouns are followed by the singular form of the verb and are referred to by the pronoun, "it".

Suzanne has had a constant source of vocabulary input and reinforcement in her sister, Nicole, who was two years younger. At age six years and three months, Nicole was given the Peabody Picture Vocabulary Test and the Test for Auditory Comprehension of Language developed by Elizabeth Carrow. Her receptive language age on the Peabody was eight years and two months and her age equivalency on Carrow's test was six years eleven months. Perhaps because of her sharing vocabulary and language learning experiences with Suzanne, Nicole has learned to be a good model for Suzanne as well as develop an above average language ability.

Teaching situations often came from informal play or story times as with a favorite picture book, Snow White and the Seven Dwarfs. We learned "grumpy", "happy", "sneezy", and "dopey" from the little dwarfs on the kitchen wall. Nursery rhymes served as good sources for teaching prepositions as was previously mentioned.

Teaching opportunities have come from school or neighborhood situations as when a playmate wanted to play with something of Suzanne's in preschool or when she couldn't understand in third
grade why it was wrong to help a classmate with a test answer. The concepts needed words to describe them and "share" and "cheat" were put on the kitchen wall near the table and the family would take turns giving examples of each word.

Conclusions

1. Suzanne appeared to be ahead of deaf children of her age in receptive vocabulary and behind hearing children in this age.

2. Suzanne's vocabulary lag was not as great as could be expected of a child with her hearing loss. She will need help learning new vocabulary in content areas in school in most of her future years, however.

Implications for Teaching Vocabulary to Young Deaf Children

1. The deaf child's vocabulary is best developed as is a hearing child's, in meaningful situations and through his own needs for communication.

2. Concepts and vocabulary must go "in" before one can expect the deaf child to produce expressive vocabulary.

3. Teaching vocabulary through the "natural method" is not a "hit-and-miss" situation, but takes careful planning and a knowledge of the vocabulary needs of normal children as well as of the deaf child whom one is teaching.
5. Deaf children learn a great deal of communication skill from hearing peers and siblings. Young deaf children benefit from a normal school environment. (Layman, 1974, Darbyshire, 1970; Northcott, 1970.)

6. In the beginning, especially, deaf children should be encouraged to express themselves or to explore and ask questions in any way they can. (At first, Suzanne used a favorite scrapbook to show us what she wanted when we didn't understand her.)

When Suzanne was four she brought a cocoon to me and showed that she wanted to know what it was. The stages of the moth were explained to her through pictures and Suzanne was proud to show her father what she had learned when he came home that evening.

7. As soon as a child learns a word, use a synonym for that word. According to Parsons (1970), deaf children use a high proportion of nouns, and a low proportions of verbs and modifiers in comparison to hearing children. This suggests that we should use many different types of modifiers and verbs as well.

8. When deaf children are able to read and write, they should be held more accountable for grammar and correct usage of vocabulary. They can begin to look up and use synonyms of words then as well.
Language Development

Learning language is more than learning concepts and the symbols related to those concepts. It also involves being able to put these symbols together in an order that is reasonable and correct.

There still seems a great deal to be learned about language acquisition in children, but researchers generally agree upon the following: (1) the normal child is born biologically constituted to learn language, (2) language acquisition is a developmental and hierarchial process, (3) the normal child has acquired phonological and morphological aspects of language by ages four or five.

Brown and Bellugi (1964) have described three processes by which children develop language: (1) by imitation; the child verbalizes on his own level, (2) by expansion; the parent repeats what the child says in expanded form and helps the child test his hypothesis, and (3) by induction; the child constructs language he has not heard but has had experience with.

Watson (1969) related the hearing impaired child to the above, "Language learning takes place in infancy as a result of hearing, imitation, and "feedback" processes. A hearing loss interrupts this cycle."

In her book, Sentences Children Use, Menyuk compared the hearing impaired child to children whose language development deviated from normal development as the "most extreme case" and continued, "The
deaf who by definition do not hear patterned sequences and, therefore, cannot derive and confirm hypotheses from data and store them in memory. He must laboriously learn to associate visual signs produced by the lips of the speaker to what he himself understands and produces and derive, from this, hypotheses about the language. It would seem then, that the first step in the generation of utterances by these children would be imitation of a small set of utterances, severely restricted in length (perhaps only one morpheme) and the derivation of some very limited hypotheses about language" (Menyuk, 1969).

Studies by Quigley, Wilbur; Montanelli (1974), Power and Quigley (1973), Wilbur and Quigley (1975), and Quigley, Smith and Wilbur (1974), on different aspects of acquisition of language point out an improvement with age in grammatical usage but a definite lag in development in deaf children. Some deviant error patterns were discovered as well, such as omissions and substitutions.

Implications that might come from the above would be that (1) because of his hearing loss, the deaf child does not develop language at the same rate and perhaps not always in the same manner as the normal child, and (2) by the time children reach school age, they are expected to be able to comprehend almost all sentence and morphological patterns. Reading series reflect this expectation as the introduction to new vocabulary is carefully controlled, but the introduction to new sentence patterns is not (Hargis, 1970).
"Results of studies indicate that the child does not listen passively to language in his environment attempting merely to reproduce only what he can remember of what he has heard but, rather, actively goes through a process of matching what he hears to structures that he has internalized in order to regenerate or generate sentences." (Menyuk, 1969)

Because the deaf child does not hear language in his environment with which to compare his own, he must receive help. When the child is old enough, he derives his language facility through reading and structured teaching approaches such as the Fitzgerald Key in which the child answers such questions as "who", "what", "when", or "where" in relation to the grammatical structure of sentences or the Rhode Island School for the Deaf Language Curriculum in which five basic sentence patterns are developed and the children learn to analyze a whole sentence into parts and later to transform first one sentence and then to transform two or more sentences into complex sentence patterns.

Before he can learn from the more structured approach, however, the child must have learned some language forms in a natural way, as is suitable for young children. Even as they begin more formal training, this natural method is desirable. The use of formal training should fit the child's language needs as he goes. Mildred Groht (1958), one of the proponents of the natural method of language training...
stated that language is learned and not taught and that children learn correct form through use. She advocated using the language of the children even in a structured language lesson and giving explanations of underlying rules if and when needed.

We must then be aware of the normal development of language in a child. Clara A. Hamel (1971) curriculum consultant for the Rhode Island School, stated in her introduction to the preschool program, "Although transformational grammar, or more specifically sentence patterns, is not taught in the preschool, it is important that the preschool teacher be cognizant of sentence patterns. Unless the teacher writes the language lessons and is aware of the sentence structures, she will invariably use sentences that are too long, too involved, or just run-on sentences. This awareness of sentence patterns has helped the teacher to control the language without destroying its naturalness."

Wilbur and Quigley (1975) referred to preserving the "naturalness" of the deaf child's language when they stated, "Emphasis has been on getting sentence patterns resulting in what Van Uden calls "baked sentences."

During Suzanne's preschool years, I had no formal knowledge of language development and the types of sentence patterns that she should be using. Rather, I listened carefully to the language of Suzanne's peers and tried to communicate in similar sentence patterns to Suzanne.
When Suzanne was very young, two and three, I used reinforcement (by repeating back the two-word constructions that Suzanne used) and expansion (by expanding on the one or two word phrases that Suzanne used and emphasizing the words that Suzanne knew and used).

At age four, Suzanne had not yet begun to use simple sentence patterns, so I used three approaches to help her begin.

First I used a slot chart with Dr. Krug's method of teaching a few key words in the noun, verb, pronoun, adjective classes that she had in her vocabulary in written form. Then I invited a little hearing friend in to play the game. We would take turns making sentences such as, "Mary get the blue ball.", or "Mother give Suzanne the red car." The purpose of this activity was to show Suzanne what a sentence was.

I used the Central Institute for the Deaf oral/aural method language charts that have a picture beside each sentence to show what the sentence is about and covered my mouth to see if Suzanne could tell me which one I was saying. I would ask her to try to say the sentence when she found it. The purpose of this activity was to try to help Suzanne get the "feeling" of a sentence.

In Stark's Sensory Capabilities of Hearing Impaired Children, Blesser proposed that we should help hearing impaired children speech read better by teaching them to rely on prosodic framework (Stark, 1974).
Similarly, John and Howarth are quoted as suggesting that deaf children don't reflect prosodic patterns used by others in their attempt to speak (Stark, 1974).

I found that clapping and saying the prosodic patterns when we used the Distar 1 Language program was very helpful. The first Distrar session, Suzanne was to say, "This is a boy." It was difficult, but we began by clapping and saying "a boy", then "is a boy", and then finally, "This is a boy." The Distar program is perhaps not an answer to teaching deaf children to express themselves in sentences when they are ready, but it did help Suzanne learn certain types of constructions that are emphasized in Distar.

During this important period of development, it would have been extremely valuable to have had a speech clinician to help me to be aware of the sentence patterns to be using and stressing and the developmental and hierarchial characteristics of sentence development.

The work of researchers such as Laura Lee in her development of the sentence pattern types and a method of assessing the child's syntactical abilities has been of great value in the last few years (Lee, 1966, 1971). Also the work of Bloom (1970) in analysis of the semantic intent of the child's language would provide an interesting way of assessing language development.

Factors other than the approach to teaching language to the deaf child must be considered important to language development. The degree
and characteristics of the hearing loss, the age at onset of deafness, lipreading skills, intelligence and psychological characteristics, and social environment have an important influence as well.

In her book, *Sensory Capabilities of Hearing Impaired Children*, Stark (1974), stated that researchers (Boothroyd, Levitt, Erber) have re-established the finding that both perception and production skills are highly correlated with the average pure tone thresholds in the frequency ranges most important for speech, and further, that the effect of level and the slope of the audiometric configuration can be understood in terms of the acoustic structures of speech. Amplification may cause lower frequencies to mask higher frequencies, if the child's loss is too great in the high speech frequencies.

Stark (1974) presented a suggestion of Rosenthal et al (1972) to help remediate this masking. They suggest dividing the frequency range of speech sounds into bands and presenting certain ones to each ear.

Suzanne's audiogram (see Appendix) shows that she has an advantage as her loss is quite even in the speech frequencies, so that she receives, as the audiogram shows, a great deal of benefit from amplification. "This factor is most likely responsible for the fact that Suzanne is able to articulate all speech sounds" (University of Montana Speech, Hearing and Language Clinic records, 1975).

Age at onset of deafness is a very important consideration in the development of language. If a child becomes deaf after the early
formative years, he has an advantage. The profile in Kirk's book, *Educating Exceptional Children*, illustrated this point well. The table in the appendix, gives the educational profiles of Carl, who was born with normal hearing and became deaf at age 7, and Jim, who was born deaf.

Stark also stated that lipreading skills need to be considered as predictors of a child's ability to acquire language skills.

Suzanne has good lipreading skills but depends a great deal on her hearing as well. She becomes quite upset when we ask her to lip-read without her hearing-aid, and her hearing-aid is the first thing she puts on in the morning.

In reference to lipreading, Suzanne mentions often that the slow speed at which people talk to her often hampers her comprehension. She mentions this on page 80 of this study in the sample for the Developmental Sentence Scoring which was taken from a recording made at the lunch table and of which she was unaware.

Nora Wilkinson (1970) summarizes much of what we have mentioned in:

Deaf children can and must be given awareness of structural language patterns provided that: (1) they are not regarded as the lowest rung on the ladder... as those who have tried and failed to respond to easier ways of learning, (2) they are given opportunity early and continually, (3) they are in contact with people who care about them as people whose ideas, wants, emotions, interests, and capabilities are
understood and appreciated, (4) a mechanical approach is not used, and (5) unless motivated, the child rarely gives more than 10% of his energy to do the job. The motive is rooted in his relationship with other people.

Tests used to assess Suzanne's language abilities were the Illinois Test of Psycholinguistic Abilities, the Developmental Sentence Structure scoring method of Laura Lee, the Northwest Syntax and the Diagnostic Language Test mentioned in "Vocabulary Development."

**Illinois Test of Psycholinguistic Abilities**

The ITPA best furnishes a measurement of Suzanne's language growth from an early age as it was first given to her at age four.

Because the ITPA has subtests that are highly verbal, it is often difficult or impossible to use in its entire form with a deaf child. This is reflected in the testing of Suzanne at age four when she was unable to perform the subtests of grammatic closure and auditory association.

The ITPA has been given Suzanne by her mother at age eight and by a speech and hearing clinician at ages four years and four months and nine years and nine months.
<table>
<thead>
<tr>
<th>Representational Level</th>
<th>Age 4-4</th>
<th>Age 8-9</th>
<th>Age 9-9</th>
</tr>
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<tr>
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<tr>
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<td>Grammatic Closure</td>
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<tr>
<td>Mean Auditory-Vocal SS</td>
<td>15.5</td>
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</table>
The most significant growth occurred between ages four and eight in the auditory and auditory-vocal levels. The visual-motor level remained essentially the same and in all cases was above the mean scale score of 36.0 for hearing children.

The subtests that presented the most difficulty for Suzanne at all levels of age were auditory reception, auditory association, verbal expression and grammatic closure. All of these areas show growth but all of them, with the exception of verbal expression, are below the norm.

At all ages, Suzanne's mean scaled score is near the mean scaled score of 36.0 for a normally hearing child.

**Northwest Syntax Screening Test**

As indicated by researchers such as Ratusnik (1957) and Prutting (1975), the NSST cannot be used as a reliable diagnostic tool. It is best used for screening mentally retarded children and children delayed in language.
However, we chose to use the NSST as the research of L. Presnell (1973) provided us the opportunity to compare Suzanne's scores with the mean score of Presnell's test group consisting of 47 deaf children whose average age was nine. Suzanne was eight years and nine months old at the time the NSST was administered.

**Receptive Score**

Suzanne - 31  
Test group mean score - 24.02

**Expressive Score**

Suzanne - 36  
Test group mean score - 16.79

Suzanne's scores compared to a normal seven year old and were in the 10th percentile receptively and the 25th percentile expressively. She scored about two years below her age level for hearing children.

**Developmental Sentence Scoring**

The DSS as developed by Laura Lee (1971) provided a method of measuring the level of development in the language areas of syntax and morphology.

The child received a score of sentence points for the number of correct sentences and a mean score which may be converted to developmental age level and a percentile for that age level.
The DSS provided an opportunity to analyze the child's spontaneous generation of simple and complex sentences by using a scoring method by Lee on a sample of fifty consecutively recorded sentences.

The DSS was given to Suzanne at ages eight years and nine months (with the old scoring and norms) at nine years and nine months and at ten years and four months.

Age 8-9. Suzanne received a mean 7.77 DSS which put her in the 25th percentile for an eight year, nine month old child. This corresponded with the scores on the NSST given at this time as being low for her age, and indicated that Suzanne was developmentally behind in her ability to construct and comprehend sentences.

Suzanne received 42 sentence points out of 50. Improper use of interrogative sentences and incorrect forms of verbs and past tense accounted for sentence points missed.

Some of Suzanne's interrogative sentences were stated as declarative sentences with the question being formed by inflection of her voice which may have indicated that she was in a developmental stage of forming questions. More advanced forms of the questions in later DSS samples support this hypothesis although many of these later forms are still incorrect.

There were few negative and complex statements as indicated by low scores in the areas of negative constructions and use of conjunctions.
Age 9-9. This sample was scored and analyzed by a speech and hearing clinician and remarks are quoted from her final case summary:

A Developmental Sentence Scoring was done on a sample of Suzanne’s learning for the purpose of evaluating her sentence structure. Her DSS score of 11.04 places her in the 50 to 60% range for a hearing child of her age. In this particular language sample, Suzanne used very few indefinite pronouns, and not nearly as many secondary verbs as primary verbs, but she did receive 45 sentence points out of 50. It appears that most of Suzanne’s sentences are correct grammatically but do not contain some of the more advanced verbs and interrogative reversals, etc. Most of her sentences consisted of personal pronouns and primary verbs. It would be very useful and interesting to do a follow-up DSS for comparison purposes to measure change in sentence structure and grammar usage after a year of more language and reading experience (University of Montana Speech, Hearing and Language Clinic, 1975).

At this age, Suzanne’s placement in the 50 to 60 percent range for a hearing child her age corresponds to the Total Language score on the Iowa Every Pupil Tests of Basic Skills, which placed her in a national percentile of 56 and a local percentile of 47 compared to hearing children. The Iowa Basic was given to Suzanne approximately two months after this DSS was given.

Age 10-4.

Language Sample for DSS

1. Do you know what?
2. One Friday morning, we went to the door - knock, knock, knock.
3. Then she said, "Come in."
4. She had to go all the way up to get her boots.
5. She should'a get her black ones.
6. What time do we go to the beauty shop Friday?
7. Do you have pain or hurt?
8. Have you ever had pains in your legs?
9. Have I?
10. What does an earache feel like?
11. What does it do in your ear when you have an earache?
12. Can you hear when you have an earache?
13. Does it sound funny?
14. How come your ear never gets tired?
15. Are mine?
16. Is yours?
17. What happens when you have it full of wax?
18. Why don't I hear?
19. Were you afraid that I was going to die?
20. Or can't see?
21. What's retarded?
22. All that!
23. Or can't hear?
24. Do you know what?
25. Do you know when me and Theresa walk up the alley and there we saw a big retarded girl one time and we were afraid of her.
26. Retarded people are sort of mean because they don't think right.
27. We went real quite past because we were afraid of her.
28. We thought retarded people are very mean and doesn't think right and hit you and stuff.
29. Sometimes retarded people doesn't think.
30. We were afraid they would hurt us or kill us or throw rocks and stuff like that because they don't think right.
31. I wouldn't care if I can't talk.
32. I do care about deaf.
33. People talk so slow and it's hard to understand.
34. They wouldn't.
35. I told them to but they just didn't listen to me.
36. Mom, um, do you know why I don't care?
37. I don't listen very well, but want to listen.
38. I don't want people to talk slowly and say, "Are you deaf?"
39. Some people talk so I can understand.
40. Have I ever been with deaf children in deaf school?
41. No, Great Falls.
42. R. B.'s daddy's really tall.
43. He'll bump his head on the ceiling.
44. I wish I had a brother.
45. Am I?
46. Am I going to deaf school in Missoula?
47. Are there other deaf children in Missoula?
48. That's too hard.
49. I don't.
50. Is big R. B. going to be in the same school?

**Age 10-4 Scoring.** Suzanne's DSS of 12.14 places her in the 70 to 75 percent range for a child her age.

Suzanne received 41 sentence points out of 50 with lost sentence points due to errors in forming adverbs and in agreement of verbs in tense and number of complex sentence patterns, especially.

Suzanne used few indefinite pronouns and secondary verbs as in her previous sample.

Most of her sentences, again, contained personal pronouns and primary verb constructions. Suzanne is using complex sentence patterns with the use of conjunctions.

---

**Table 2.2. A table to compare DSS at ages 8-9, 9-9, and 10-4**

<table>
<thead>
<tr>
<th></th>
<th>Age 8-9</th>
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<th>Age 10-4</th>
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<td>Personal Pronouns</td>
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<tr>
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<td>12</td>
<td>58</td>
</tr>
<tr>
<td>Wh-Questions</td>
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<tr>
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<td>36/50</td>
<td>45/50</td>
<td>41/50</td>
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<tr>
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<td>8.08</td>
<td>11.04</td>
<td>12.14</td>
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</table>

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Conclusions from Table

Suzanne seemed to be using fewer indefinite pronouns and more personal pronouns in contrast to earlier years.

Only a slight increase showed in the use of secondary verbs.

Suzanne was, however, using more complex sentence patterns as indicated by a significant rise in the number of conjunctions being used.

In looking at the sample, errors with agreement of verb tense or number or with the proper usage of tense occurred most often in complex sentence patterns. This may be due to the increased grammatical "load" as mentioned by Lee (1971) in the complex structure.

The pattern of scores on the interrogative reversals and the wh-questions suggested, perhaps, the nature of the conversation during the sampling rather than a developmental trend.

Suzanne received more sentence points for correct sentences at ages 9-9 and 10-4 than at 8-9.

The rise in DSS may be due for the most part to an increase in the use of personal pronouns and conjunctions. The later was due to an increased tendency to generate complex sentence patterns.

Suzanne's greatest difficulty seemed to lie in her verb usage. According to Groht (1958), the misuse of verbs is probably the cause of 50 percent of the errors made by deaf pupils and deaf adults.
Suzanne's Correction of Written Composition and DSS Sentences

We have noted that Suzanne was perhaps at this stage, more capable of producing correct grammatical norms and correct sentence patterns than her DSS score indicated. If this were true, then it would be most beneficial to assist her in learning to monitor her written work and her spoken language better.

In order to test this hypothesis, we asked Suzanne to write a story and when it was finished, suggested that she correct verb tense and agreement (one example of each error was pointed out) and write the story a second time. Then, the incorrect sentences from the DSS with a space below provided for corrections, were given her and she was told, "These are some sentences that you said last week and Mom recorded them. See if you can figure out what is wrong with them and correct them."

Story First time (Uncorrected)

"Prince and Sandy." Once there was a puppy named Prince. He is very small and black. One night Prince was a bad bad puppy. Prince saw a cat and ran to the cat, and chew on the cat's tail. And the cat got really mad so the cat start to chase Prince. And Prince chew on the people's pant. One day Prince went outside to play with the compy (company). When the people saw Prince they laugh and laugh so hard. When Price got milk, he lick the milk after he was
done. Prince walk around with milk all over his face. One afternoon he went outside to walk around the block. While he was walking he saw a beautiful puppy. The beautiful puppy was a girl. Prince was so surprised. Prince and the beautiful puppy what her name is. The beautiful puppy said my name is Sandy. Prince said in a surprise oh what a neat name. I like your name it is such a beautiful name. Sandy said to Prince what is your name. Prince said, "Prince." Prince and Sandy said together at the same time. Will you please marry me: And we can stay with each other. I hope we will have fun being marry, I hope so. So they live happily all together. So they kiss and hug each other.

The End.

Total Number of Correct Sentences

12/24

Sentences were counted as correct if they were correct grammatically; punctuation, and spelling were not considered. If a sentence was not in the proper tense, even though correct, it was considered wrong.

Corrected Story

"Prince and Sandy." Once there was a puppy named Prince. He is very small and black. One night Prince was a bad bad puppy. Prince saw a cat and ran to the cat and chewed on the cat's tail.
And the cat got really mad so the cat started to chased Prince. And Prince chewed on the people's pants. One day Prince went outside to play with company. When Prince saw the milk he ran to the milk. While Prince is drinking the milk he licked and licked the milk. After Prince was done, he went to walk around with the milk all over his face. When the company saw Prince they all laughed and laughed so hard that the people could not breathe well. One afternoon Prince went out for a walk around the block. While Prince is walking, Prince saw the girl puppy. Prince and the beautiful puppy started to walk down the street, while they are talking. So Prince said to the beautiful puppy what her name is. The beautiful puppy said my name is Sandy. Prince said in a surprised voice, Oh What a neat name. I like your name. It is such a beautiful name. Sandy said, to Prince, what is your name? Prince said Prince. Prince and Sandy said together at the same time. Will you please marry me? And we can stay with each other. I hope so. So they lived happily all together. So they kissed and hugged each other.

The End!

Total Number of Correct Sentences

22/27

Corrections of DSS Sample

5. She should'a get her black ones.

Correction: She should have got her black ones.
25. Do you know when me and Theresa walk up the alley and there we saw a big retarded girl one time and we were afraid of her.

Correction: Do you know when me and Theresa walked up the alley and saw a big retarded girl one time and we were afraid of her.

27. We went real quiet past because we were afraid of her.

Correction: Unable to suggest correction.

29. Sometimes retarded people doesn't think right.

Correction: Sometimes retarded people do not think right.

32. I do care about deaf.

Correction: Unable to suggest correction.

33. People talk so slow and it's hard to understand.

Correction: People talk so slowly and it's hard to understand.

In both Suzanne's spoken and written language, she was able to correct half or more of her errors without assistance.

In her written sample, Suzanne was not penalized for punctuation errors, but she needed work on punctuation, especially with direct quotations.

The most frequently occurring error in her written work was the disagreement of verb tense in her complex sentences.

In Suzanne's corrections of her spoken language sample, Suzanne was able to correct errors in tense with the exception of "got" for "gotten".
Two of the errors that Suzanne was unable to suggest corrections for were with the need for a secondary verb or an adverb with endings that she may be unable to hear. This suggests that Suzanne may benefit from assistance in learning to add the "-ly" ending to adverbs and in using the "-ing" or gerund form of the secondary verb.

The general conclusion that might be made from Suzanne's corrections was that Suzanne should be ready to monitor both her spoken and written language and to improve them through her monitoring.

Diagnostic Language Test

The DLT was given in order to compare Suzanne's language ability to that of other deaf children her age. It was hoped that we would get an opinion through correspondence with Helen Woodward about Suzanne's abilities. Ms. Woodward was very generous in her response and her entire letter and pages of comments and remedial suggestions follow with Ms. Woodward's permission.

The DLT was a good measure of Suzanne's ability to comprehend and answer questions -- a task required a great deal of her regular school work.
October 2, 1975

Mrs. Marvin E. Holtz  
318 6th Street  
Helena, Montana 59601

Dear Mrs. Holtz,

Your letter of September 24 has been forwarded by Central Institute, and I was certainly interested to read of the work you are doing with Suzanne.

I have revised the tests that were written up in the Volta Review and am in the process of preparing a scoring guide and manual and otherwise getting them ready for general use. Since these things always take longer than one expects, however, I cannot promise when they will be available. However, I am enclosing a shortened, consolidated version of the three tests which I used at Central Institute. I would be glad for you to give it to Suzanne, but send it on the understanding that it will not be copied and disseminated in any way since some of the items appear on the revised tests which I hope to get published. If you care to send Suzanne's paper to me, I will be glad to score it and send you comments on her performance. You should realize, however, that it is likely to prove very difficult for a ten year old, and not be discouraged if she has a hard time.

All good wishes in your thesis work and for Suzanne's continued progress.

Cordially,

(signed)

Helen M. E. Woodward
Comments on Diagnostic Language Test--Suzanne Holtz

Taken October-November, 1975.

1. Spelling is weak. Suzanne seems to be using vocabulary that she has picked up through hearing and/or lipreading. She needs to be more aware of the written form of words.

2. She makes a number of language errors that also appear to stem from imperfectly perceived auditory-oral patterns. I think that she would profit from more written work and from explicit work on particular language principles as noted below.

3. She omits "s" on her plurals. Also treats "teeth" as singular.

4. She needs work on the concept of mass nouns--to realize that they are neither singular nor plural but are followed by the singular form of the verb and are referred to by the pronoun "it". Examples from Suzanne's test are: food, wood (in sense of a material or firewood), electricity. This work would combine nicely with work on singular and plural of count nouns.

I enclose a few notes.

5. Suzanne confuses "wood" in the sense of a material with "woods" meaning a forest.

6. She leaves the "ed" off past participles used in the passive construction--get dressed, get burned, etc.

7. She needs work on the verb "to have"--doesn't seem to use the "has" form for the third person singular.
8. She needs work on formulating rules using the imperative or "should" with the impersonal "we" or "you".

Eg. Eat healthy foods.

or

You/we should eat healthy foods.

9. She needs to practice the "someone-anyone" distinction.

10. Comprehension problems: Suzanne needs work on the following question forms:

   How often _____________?

   What would you do if _____________?

   How should you _____________? (manner)

   How can you tell a _____ from a ________?

   How are _______ and _______ alike/different?

   At what time of year _________________?

   What is a _____________? (Needs to learn how to formulate a definition using structures such as "A _____ is a _____ that _____.")

   In what town/state/country _________________?

   What is _____________ like? (Applied to both geographic places and people)

11. Don't know why Suzanne left out question 27. It would be interesting to ascertain how she does on giving directions for doing something using either the imperative or the impersonal "you/we".

   E.g. Clear a circle on the ground. Then gather some wood and ............
or

First you clear a circle on the ground. Then you gather some wood and....... 

General comment: A very fine paper for a just-ten-year-old! Suzanne is obviously on her way and just needs a little more experience with written work and some practice involving the language principles and constructions with which she is having trouble--also some systematic work on the more advanced question forms.

Conclusions

Suzanne's language development has not progressed in a deviant pattern as much as in a delayed manner. She began working with complete sentence patterns at the age of four, when most children are quite sophisticated in their syntax and grammatical abilities.

With the exception of some grammatical problems such as verb-noun agreement, tense agreement, and plural endings that Suzanne has trouble hearing, she has achieved a language level comparable to hearing children of her age.

Many of these problems could be dealt with in her everyday work in the classroom and much of their learning must depend considerably on memorization. These problems were also receiving attention from her speech and hearing clinician.

Suzanne was beginning to show an ability to monitor her language.
Implications for Development of Language with Deaf Children

1. Language is best learned at an early age through the "natural approach" based on the child's needs for communication.
   Language is learned and not taught.

2. There is an optimal period for a child in which to learn language.
   This specific ability to learn language peaks around three or four years of age. (Moores, 1970)

3. Even after the preschool years, language is best learned through the natural approach based on the child's needs and offering rules as the child needs them. Even formal language lessons should be based on the natural language of children.

5. The deaf child's self-concept and his relationship with those in his environment have a strong influence on his language development.

6. Reading plays an important part in the development of a deaf child's language.

7. Other factors that affect the deaf child's development of language are early amplification, the age of onset of deafness, the degree and characteristics of his hearing loss, his lip-reading skills, and his intelligence.

8. As soon as a child is able to do written work, he should be encouraged to do a great deal of his work in this form. This enables his teachers and clinicians to be better able to see his difficulties with language and it enables him to be better able to see and correct his errors and to be accountable for his language.
Achievement and Mental Ability

Formal testing is sometimes necessary or desirable for comparing the deaf child's progress to that of his hearing peers, or in the case of psychological testing, to predict the type of program in which the child will be able to make satisfactory progress. In Vernon's article in the March 1967 Volta Review, it was stated that an average range or better on the performance scale of an intelligence test is almost essential if a congenitally deaf child is to succeed in a program for the deaf. A much higher performance score would certainly be required for the child who was not receiving his education in a special program.

Because of his language impairment, it is difficult and often inaccurate to use formal testing with a deaf child, especially verbal tests or those requiring a great deal of explanation.

When Suzanne was given her preschool screening tests to determining whether or not she was ready for first grade, the examiner asked her to draw a "person" and Suzanne drew a purse and failed the Draw A Man portion of the battery of tests.

We must be careful not to give these tests too much consideration, however, as factors such as the child's own personal value system developed in the home, his linguistic abilities, his visual perception, his early exposure to language and abstract concept formation, his own individual learning difficulties and their
relationship to his educational environment, his self-image and
his teacher's receptiveness to him and her effectiveness all play
their part. (Bernstein, 1974)

Levine (1971) added further cautions and guides to interpretation of formal tests. She felt that one should be "familiar with
the principles and intentions of psychological assessment and that
one should be able to apply these principles to the problems of
testing deaf children. One should also be able to develop special
techniques and insights to facilitate testing while preserving the
basic intent."

Whenever possible, the examiner should secure the assistance
of those experienced with deaf children, study items qualitatively
and quantitatively, submit scores for recording only when convinced
that they are valid, arrange for retests when there is question of
validity, and follow up the testing. (Levine)

Questioning the validity of scores on the basis of the child's
performance would seem to be most important as a very low score
could place a child into a program with not enough challenge or a
high score might place him into a program that would defeat him.

Levine also stated that deaf children are acutely sensitive to
the influence of variables. When Suzanne was in the first grade,
she did so poorly on a group reading test, that her teacher contacted
me. She knew Suzanne's level of performance could be better but the
group testing had not indicated a high level of performance at all.

We decided that we had two alternatives: (1) to place an explanatory note on the school record, or (2) to prepare Suzanne by carefully going over the test first so that she knew what she was to do and was aware of difficult vocabulary.

Going over the test beforehand worked beautifully in the second grade as Suzanne's scores all placed her at an average or slightly above average ability-where her level of performance was.

The third grade teacher chose to place an explanatory note on all of Suzanne's tests that were placed in her permanent file.

In grade four, we carefully went over the test beforehand and Suzanne achieved in the 99th percentile, far above where she could actually be expected to perform. She had perhaps passed the time when this help beforehand was needed.

Suzanne was given the Iowa Every Pupil Tests of Basic Skills without any previous explanation, November, 1975.

In all of these situations, Suzanne's teachers had to be aware of her actual performance in order to be able to use the tests to their best advantages: to see how she compared to her hearing peers with or without special assistance and preparation, and to use the test to find special problem areas that were not evident in regular learning situations.
Informal assessment and/or diagnostic teaching is most beneficial because of the deaf child's sensitivity to variables in testing. Perhaps along with the psychological testing should come an approach such as Piaget used to teach the deaf children without expecting him to explain his activities verbally. This approach would help clinicians assess the child's cognitive abilities and progress as well as devise effective approaches less verbally demanding than formal intelligence tests. This testing approach would allow the child to be an active learner as well.

Sidney Wolf, assistant professor at New York State University (Geneseo) developed a series of teaching materials and activities to use practical aspects of Piaget's theories to promote concept formation in hearing impaired children without depending on sound. (Bernstein, 1974).

Assessment of achievement with the older deaf child can best be done when helping him with schoolwork on an individual basis. If the teacher is aware of progress of the deaf child's hearing peers, she is able to compare difficulties and progress in certain areas. This approach also allows the child to learn while being assessed and for Suzanne, brought the most interest and cooperation because it was relevant to what she was doing in the classroom.

Formal psychological tests that were given to Suzanne were the Hiskay-Nebraska Test of Learning Aptitude and the WISC performance and verbal scales. The H-NTLA was chosen because it is non-verbal.
and has standardized norms for deaf children as well as for hearing children, and the WISC was chosen for comparing her to hearing children because it is frequently used by school psychologists.

Formal achievement tests were the Iowa Every Pupil Tests of Basic Skills which is the standard measure used in the Helena Public School System and the Durrell Analysis of Reading Difficulties to diagnose problem areas at the fourth grade level.

Reading was carefully considered as it is perhaps the area of achievement that will most influence the deaf child's academic success or failure and yet it is frustrating because it reflects the child's difficulty with language.

When Suzanne was tested at the Montana School for the Deaf and Blind at age 7, the psychologist expressed the importance of reading. "Suzanne's overall intellectual level is above average. Her oral communication abilities--although quite good considering her handicap--are considerably lower. Thus it can be expected that she will encounter numerous problems in the classroom whenever group directions or explanations are given. However, she should be able to advance to second grade if her reading ability (particularly comprehension) is at or above her present grade level."
Hiskey-Nebraska Test of Leaning Aptitude and WISC (Wechsler Intelligence Scale for Children)

The H-NTA has been given Suzanne on two different occasions: (1) at the School for the Deaf and Blind at age seven, and (2) at the Speech and Hearing Clinic, University of Montana, at the age of nine years and nine months.

At age seven, Suzanne achieved an I.Q. score of 120 compared to her hearing peers and 128 compared to deaf children.

At age nine, she achieved an intelligence score of 110 compared to her hearing peers, and 114 compared to deaf children.

At age five years and seven months, Suzanne was given the performance scale of the WISC and achieved a score of 128. The performance and verbal scales were administered at age seven years and five months and Suzanne achieved a score of 119 which compares closely with the score of 120 on the H-NTLA given at the same time.

Her verbal score was much lower than the performance with her receptive level at three years and five months and her expressive level at five years and seven months. Her overall oral communication ability was five years and seven months. This two year lag corresponds with formal language and vocabulary tests reported in previous chapters.

In summary, it could be stated that Suzanne had an above average non-verbal cognitive ability but that the discrepancy in verbal level indicates that one should expect difficulty in achievement in high verbal areas such as reading, science, and social studies.
Iowa Every Pupil Tests of Basic Skills

Suzanne was given the Iowa Basic Skills test at age 10 in a group situation. The test should be, then, a valid measurement of how she achieved compared to hearing peers in a classroom situation.

### Iowa Basic Scores

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<td>47</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Map Reading</th>
<th>Reading Graphs</th>
<th>Reference Materials</th>
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</thead>
<tbody>
<tr>
<td>Grade Equivalent</td>
<td>4.7</td>
<td>4.4</td>
<td>5.1</td>
</tr>
<tr>
<td>National percentile</td>
<td>69</td>
<td>59</td>
<td>83</td>
</tr>
<tr>
<td>Local percentile</td>
<td>50</td>
<td>41</td>
<td>77</td>
</tr>
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</table>

### Total Work-Study Skills

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Equivalent</td>
<td>4.7</td>
</tr>
<tr>
<td>National percentile</td>
<td>73</td>
</tr>
<tr>
<td>Local percentile</td>
<td>57</td>
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Suzanne's composite score shows her achievement to be about three months below grade placement at the time of testing. Her total language score is near the 50th Local Percentile and National Percentile and one month above grade placement.

Suzanne showed a year lag in vocabulary and language usage but we found it of interest that the reading comprehension lag is not as great. This could be interpreted perhaps that Suzanne used her reading skills and content clues to their best advantage.

Work-study skills were above the 50th Local Percentile and were somewhat higher compared to the National Percentile. Suzanne had been tutored and aided much more than her hearing peers in these skills. A great deal of time was spent referring to maps in the text as we read or when someone went on a trip. We carried a map with us on our plane trip to California and traced our route as we went.
Encyclopedias and magazines such as *National Geographic* were often used to supplement social studies and science texts and to add interest.

Suzanne's largest discrepancy between achievement and grade placement was in mathematics. Mathematics problem solving scores may be low because of the verbal reasoning processes required. It has been noted during tutoring sessions that Suzanne would accommodate to one type of reasoning pattern that resulted in a process of subtraction or addition and then found it difficult to reverse the process in the next problem.

Harper (1964) stated that hearing impaired children are most retarded on tests involving a factor of verbal comprehension either directly or indirectly, as in tests with number content, and on most tests involving a factor of abstract figural reasoning.

Myklebust (1964) suggested that deaf children could be helped by specific training in certain types of mental operations such as deductive reasoning (Watson, 1969).

Total mathematic scores indicated that Suzanne performed on a level one year below placement and was in the lower 30th National Percentile and the lower 20th Local Percentile. It was interesting to note that Suzanne achieved an above average grade in arithmetic in the classroom. This may be due to the fact that emphasis was on performance in computation rather than "story-type" problems and may
indicate that Suzanne will need assistance in more advanced mathematics courses that require reasoning such as algebra and geometry or that she should not elect this type of subject more than is necessary.

Durrell Analysis of Reading Difficulty

Reading is particularly important to the hearing impaired child for "it is only through reading that complete patterns of words and phrases will become apparent" (Watson, 1969).

Yet reading presents many difficulties to the hearing impaired child with a limited vocabulary and often a great lack of linguistic competence. Therefore, the more extensive the comprehended and spoken vocabulary the child has, the easier it is for him to read (Watson, 1969).

Linguistic competence is especially important as the child approaches fourth grade. "Comprehension of Grade Four reading as a measure by present standardized tests may be proposed as a criterion of linguistic competence" (Furth, 1966).

Reading is also important to the hearing impaired child as a source of information (Silverman, 1972) and as a means of building vocabulary.

Studies by Wright, Stone, Aronow and Moskowitz (1963) indicated that, according to a study population of 654 deaf children of Suzanne's age, (ages 10½ to 11½) that she would be performing above the expected
mean of grade level at which was level 2.7. These studies also indicated that the mean reading level for deaf children ages 15\(\frac{1}{4}\) to 16\(\frac{1}{2}\) is 3.5, according to a test population of 1075 children.

Suzanne's reading comprehension level according to the Iowa Basic was fourth grade but any specific difficulties are not indicated by this test. Therefore the Durrell Analysis of Reading Difficulty was thought to be a good follow-up examination.

The Durrell was not meant to indicate grade level ability for reading, but comprehension and errors in oral reading of the paragraphs on fourth grade and fifth grade levels were used to measure level according to percentage of correct oral reading and comprehension.

The Durrell should be modified somewhat for hearing impaired children. (Berg and Fletcher, 1970) The time element is very frustrating for the hearing impaired child and the listening comprehension test should not be used.

We tried the time element with Suzanne as a measure of her reading speed in the beginning and found that it greatly hampered comprehension. It was established that her concern over articulation errors caused a slower rate than her reading level would indicate. Reading rate was also somewhat slow in silent reading.

Berg and Fletcher (1970) also suggest that in oral reading articulation errors not be counted as reading errors and that all comprehension questions be written on cards.
Results of Durrell Analysis of Reading Difficulty Test

Suzanne's oral reading, although somewhat slow in rate, indicated that she was reading in phrases and comprehended above comprehension level (95% correct oral reading and 75% comprehension of materials at her grade level.)

Silent reading rate was somewhat faster in rate (middle fourth grade) and comprehension level was 100% at fourth grade and 75% at fifth grade level.

Listening comprehension was at third grade level which supports the suggestion by Berg and Fletcher that this part of the test should not be used as a valid measure for deaf children. The level was quite high considering her hearing loss, however, and may be an indication for Suzanne's teacher of her listening comprehension abilities in the classroom.

Word recognition and word analysis skills, as well as spelling skills, were high at sixth grade level. Suzanne's early work with phonics in her therapy sessions associating sound with symbol and her good use of amplification perhaps explain the successful development of these skills.

No particular reading difficulties were diagnosed as Suzanne was reading and comprehending at her own grade level and displayed no poor reading habits. It was noted, however, when Suzanne read at sixth grade level, that the more technical nature of the vocabulary hampered comprehension a great deal. This may indicate that,
as Suzanne progresses in school, vocabulary experience will become more and more important.

Suzanne will continue to need a great deal of individual attention as subject matter and method of presentation become more and more technical and abstract.

Comprehension scores and level on the Durrell correspond with those on the Iowa as well as the score at sixth grade level in spelling.

Conclusions

In his article, "Characteristics Associated with Post-Rubella Deaf Children: Psychological, Educational and Physical," Vernon uses the method of dividing achievement scores by the number of years in school to obtain the deaf child's education achievement and gives a norm of .4553 for rubella deaf children. This score, according to Vernon (1967), is less than half of the score expected of hearing children and less than the score expected of other deaf non-rubella children.

If Suzanne's year in the Delayed Language Class was considered, using the above scoring method, her E.A. was .9069 and if just her three years in grade school are considered, her E. A. was 1.181. Either score was comparable to that of a hearing child.

Suzanne's grade average in fourth grade was "B", or above an average rating, which might indicate that her daily work showed a great deal of effort and constant attention from her teacher, clinician, and family.
Implications for Education of Deaf Children

1. Education achievement depends a great deal on the child's ability and desire to read which in turn, depends on his language abilities. Scores on language tests correlate more with achievement than intelligence test scores. This is especially true of non-verbal intelligence test scores. (Quigley, Frisina, 1961)

2. Early vocabulary and language training is most important before a deaf child can be expected to begin reading. (Hart, 1963)

3. Care must be used in interpreting the standardized test scores of deaf children. One should be thoroughly acquainted with the particular problems of deaf children and with the child's daily performance when considering standardized scores.

4. The deaf child's self-concept affects his ability to succeed at learning.

5. The deaf child needs a great deal of individual attention with his individual learning problems. This time of individual attention provides the teacher, clinician or tutor with an opportunity to assess and diagnose achievement and to treat particular problems as they occur.

6. Diagnostic tests such as the Durrell may be used with deaf children if they are modified to consider the deaf child's needs.

7. Standardized tests are of value for the deaf child in order to compare his achievement level and progress to that of his hearing peers and to determine placement.
Emotional-Social Adjustment

Little information on the social acceptance of deaf children who are integrated into the regular system of schools is available (Kennedy, Bruininks, 1974). This, and the subjective nature of social and emotional adjustment, and my relationship with Suzanne make objectivity difficult.

The psycho-social adjustment of deaf persons is difficult to assess with instruments now available as well (Quigley, Frisina, 1961). However, on the basis of its use in other studies with deaf children, the ease of administration to a group, and because it is reported to have moderate to high stability of scores (Gronlund, 1959), the Moreno peer nomination scale was chosen to measure Suzanne's social adjustment (Kennedy and Bruininks, 1974).

The Moreno scale is conducted by giving a group of children an alphabetically ordered list of the names of the children in a particular group, and they are told to circle the names of three that they would most like to play with, work with, or sit by. Social acceptance of each child may be examined by the number of times he is chosen in relation to the other children, and in relation to the number of mutual choices made.

In addition, self-concept may be examined by determining how realistic the child is about the number of choices he has received and by examining how he perceives himself by the social acceptance of the children he has chosen.
Conclusions reached by using the Moreno scale with deaf children integrated into regular educational systems have been somewhat conflicting. Eisner (1959) used the Moreno peer nomination scale to measure the social acceptance of 45 hearing impaired children in regular classes and found them to be less accepted as a group than the hearing children. In this study, those who had milder losses and did not wear aids, seemed to be the least well accepted. There was, however, a wide range of acceptance among the children as individuals (Kennedy, Bruininks, 1974).

In his study, Force (1956) found that the children who had the most obvious handicaps were the least socially accepted. Thus, the child with the hearing aid was less accepted than the child with a less obvious handicap (Kennedy, Bruininks, 1974).

In contrast to the above, Shears and Jensema (1969) concluded that a visible handicap such as hearing aids actually reduced awkwardness in the relationship between the hearing impaired and the normal peers (Kennedy, Bruininks, 1974).

These conflicts of results may be due to the variables considered. More insight may have been gained through consideration of such variables as length of time integrated, language or communication skills and the hearing impaired child's use of amplification. There is possibly, some correlation in the results of the Eisner and Shear and Jensema studies. In both studies, children who did not wear aids
were less accepted as a group. This may have been because of a lack of communication and a resulting awkwardness in relationships. This variable was not discussed in the Force study.

In the most recent study, Kennedy, Northcott, McCauley, and Williams (1976) took such variables to examine, as early intervention and amplification and integration into a hearing pre-school or nursery situation. And results were not the same as those in the previously mentioned studies.

Their study was conducted over a three year period of time, on eleven severely to profoundly deaf pupils enrolled in the Minneapolis public school system. All of these children had experienced pre-school education with hearing children and all were full-time users of hearing aids. They had the following variables in common with Suzanne:

1. A sensorineural hearing loss at birth or shortly after birth.
2. A severe or profound hearing loss.
3. Full time use of a hearing aid or hearing aids from an early age.
4. Scored within average range on an intelligence test before entrance to first grade.
5. Were enrolled for two or three mornings a week with normally hearing children in neighborhood nursery schools.
6. Received one or more hours of weekly individual tutoring time.
7. A focus on the natural language approach in the pre-school years.

Results of this study indicated that these hearing impaired children were as socially accepted as their classmates and were aware of their own status with their hearing peers.

Tests used for this study were the Moreno peer nomination scale, forced choice social acceptance scale, and a socioempathy scale.

The Moreno scale was given to Suzanne's class in May, 1976, by the teacher who asked them to circle the names of three children they would like to sit by as they were already seated in groups of four.

As shown in Table 2.3, Suzanne was chosen significantly more often than her classmates ($t=29.53; p<.001$).

Suzanne also compared favorably to the hearing impaired children in the study for all three years. We were, however, unable to compare her over a period of three years. And data from Table 2.3 indicates that the hearing impaired children in the Minneapolis study were chosen significantly less often in 1974 ($t=2.72; p<.01$) than in 1972 ($t=2.30; p<.05$).
Table 2.3. Moreno peer nomination scale scores of hearing impaired and normally hearing children from Volta Rev., Feb.-Mar., 1976, and Moreno scale scores of Suzanne (May, 1976) and hearing classmates.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>11</td>
<td>4.54</td>
<td>3.44</td>
</tr>
<tr>
<td>1973</td>
<td>10</td>
<td>3.00</td>
<td>2.71</td>
</tr>
<tr>
<td>1974</td>
<td>11</td>
<td>1.18</td>
<td>1.17</td>
</tr>
<tr>
<td>Suzanne</td>
<td>1</td>
<td>10.0</td>
<td>7.30</td>
</tr>
<tr>
<td>1972</td>
<td>277</td>
<td>2.80</td>
<td>2.41</td>
</tr>
<tr>
<td>1973</td>
<td>260</td>
<td>2.87</td>
<td>2.36</td>
</tr>
<tr>
<td>1974</td>
<td>298</td>
<td>2.90</td>
<td>2.09</td>
</tr>
<tr>
<td>Suzanne</td>
<td>20</td>
<td>2.50</td>
<td>2.83</td>
</tr>
</tbody>
</table>

Suzanne's mutual choice data showed that she had a significant number of mutual choices ($t=29.53; p<.001$). Suzanne had three mutual choices and the mean number of mutual choices for the class was -1.

Upon being questioned, Suzanne was able to guess how many and who the children were who chose her with one exception.

She was also asked how many times each child was chosen, but always guessed that each child was chosen more often than he was. She did not realize that some of the children had not been chosen.
From results of the Moreno peer nomination scale, it could be inferred that Suzanne was well accepted in her classroom of normally hearing children and that she was aware of her status in the class.

Overall implications from these studies indicate that further research into variables such as early intervention, amplification, and integration, may prove valuable in predicting success of programs for integrating the hearing impaired child.

In addition to the Moreno peer nomination scale, the Primary Self-Concept Inventory Test developed by Douglas G. Mills, Ph.D. and Robert Leonetti, Ed.D. (1975) was given to Suzanne.

The test was non-verbal and could be used to screen children with a hearing loss who have extremely negative feelings of self-worth. The test was designed to use with children in kindergarten through grade six.

In the test, the child is shown two pictures of a boy or girl (according to the sex of the child being tested) engaged in the same activity either alone or with others, one in a positive way, and one in a negative way. The child is to point to which one is most like him or her.

Suzanne's responses were, for the most part, positive. Again, implications are that Suzanne has a positive self-concept most of the time.
3. Other variables which have been a part of Suzanne's social success and positive self-concept are (1) her speech and language abilities which were at a level that seemed to enable her to communicate relatively well with her peers and (2) her abilities in gymnastics and dance which have made her an interesting child to her peers.

When Suzanne attended a neighboring community for a gymnastic workshop in the summer of 1976, I was surprised to see her discussing some of the techniques with one of her instructors and explaining to some interested children how she "feels" the music to dance or to perform gymnastics to.

Suzanne learned a great deal that week and, perhaps because of her many years of training, advanced to the head of her class rapidly.

When she returned, there were at least two or three children wanting "lessons" all day for the entire next week. On one of these days, I overheard a hearing friend say, "Gee, I wish I was Suzanne."

Language or the ability to communicate is one of the most important variables in the successful integration of the deaf child. But the deaf child's abilities and natural talents are often overlooked because of the time and energy required to acquire language and learning.

Setting aside tutoring and therapy time had become difficult with Suzanne as she wants to practice her gymnastics three to five
hours a day in order to maintain her present abilities. But the satisfaction and positive reinforcement Suzanne receives from her success in dance seems to make her better able to tackle her sometimes discouraging school subjects.

It is of great importance that the deaf child be given every opportunity to develop his talents in order that he receive enough positive reinforcement to have the courage to tackle the difficult tasks of learning. It is one of the greatest responsibilities of the parent to see that the "whole child" is developed.
We realized that she has many disappointments to face and that her deafness troubled her more than we realized at times.

Lately, she has been telling some of her friends that she doesn't want them to tell people that she is deaf any more because she can hear "perfectly well".

But perhaps her prevailing attitude is best portrayed by her remarks when I asked, "Suzanne, why are you so beautiful?"

Suzanne replied, "Because God made me this way."

Then, after a thoughtful pause, "But He made me deaf too."

Again, a pause, and, "But that's all right. I'm okay, aren't I, Mom? Can I go over and play with Theresa?"

Conclusions and Implications for Further Study

1. Because of indicated social acceptance of children in the studies by Kennedy et al, and of Suzanne, all of whom experienced early intervention and integration into regular pre-school programs, further study into the importance of these variables in planning programs for young deaf children would be valuable.

2. In Developmental Studies of Deaf Children, Fiedler (1969) concluded that at least one-half of the children she studied, experienced a "separation trauma" involving developmental and learning problems from being placed in a residential setting at an early age. Perhaps this aspect of early education for deaf children should be further explored as well.
CHAPTER IV
CONCLUSIONS

This thesis attempted to present a profile of a specific ten-year-old deaf child showing her speech, language, academic, and social maturity skills and level compared to those of hearing and deaf children the same chronological age. This was done by using formal and informal tests to measure these areas and by comparing her "norms" with published norms for hearing children and for deaf children when possible.

The profile showed her to have speech and language skills comparable to those of hearing children of her age, although her vocabulary is more limited. It also shows her to be achieving at placement grade level in academic areas. Research supported the probability that Suzanne's "near-normal" language skills may contribute more to her academic success than her above average mental ability (Quigley and Frisina, 1961, 1967).

McKay Vernon, along with others, stated that an above average mental ability is necessary for the deaf child to achieve.

Because of Suzanne's apparent strength in her communication skills, an attempt was made through research and a careful study of her development from birth to the present time to find correspondence (relationship) between her environment and research concerning important influences on language development. As the early
years are those most important to language development, particular attention was paid to that period in Suzanne's life.

Conclusions that could be drawn from the study are that the early amplification, constant home intervention with professional guidance involved, and early integration into a regular nursery school all had a positive effect on Suzanne's language development. The "natural" approach to language that was used perhaps should also be considered as having an influence on her "normal" appearing language development.

In addition, through examination of the narrative of Suzanne's life and through a limited study on her present peer-acceptance rate in class, one might conclude that she is a socially-emotionally well-adjusted child. One can only speculate that the "normal" neighborhood and nursery school environment had a positive effect on Suzanne's emotional growth.

A general conclusion that could be reached is that a great deal of effort on the part of parents, family, professionals, and the child himself is necessary in order for the deaf child to experience success in the hearing world and that this effort is especially important in his early years.

It is during these early years for the deaf child, then, that it would seem that he and his family need a great deal of support and education from a team of professionals, and from non-professionals
such as other parents of deaf children, for guidance through this important time.
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Hiskey, M., Nebraska Test of Learning Aptitude for Young Deaf Children, Lincoln University of Nebraska, 1955.


Jenkins, Gladys Gardner, Shacter, Helen S. and Bauer, William, These Are Your Children, Scott Foresman & Co., 1953.


John Tracy Correspondence Course for Parents of Little Deaf Children
John Tracy Clinic, 806 West Adams Boulevard, Los Angeles 7, CA.


University of Montana
Speech and Hearing Clinic
AUDIOLOGICAL EXAMINATION

Name: Suzanne Holtz (Telephone) .............................. Date: 8-15-75

Parent: Marvin & Jeane Holtz .............................. File No.: ............................................

Address: Helena, Montana (Zip) 59601 ............................ Age: 9-9  B/D 10-16-65

Referral:  ................................................................ Examinet: D. Manovich  .................. Audiometer: GS 1701

This audiogram is plotted on the basis of 1969 ANSI reference levels.

Note: Readings obtained on the audiometer calibrated to 1951 ASA standards may be converted to 1969 ANSI standards by adding the appropriate "difference in dB" for each frequency as given below. To convert from 1969 ANSI to 1951 ASA values subtract the difference in dB.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>1500</th>
<th>2000</th>
<th>3000</th>
<th>4000</th>
<th>6000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in dB:</td>
<td>9</td>
<td>15</td>
<td>14</td>
<td>10</td>
<td>10</td>
<td>8.5</td>
<td>6.5</td>
<td>6.0</td>
<td>9.5</td>
<td>11.5</td>
</tr>
</tbody>
</table>

REMARKS

○ thresholds with Phonic Ear

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Legend:

**AIR CONDUCTION**
- RIGHT EAR ○○ RED
- LEFT EAR X X BLUE

**WITH MASKING**
- RIGHT EAR ▲▲ RED
- LEFT EAR ▲▲ BLUE

**BONE CONDUCTION**
- RIGHT EAR ——— RED
- LEFT EAR ——— BLUE

**WITH MASKING**
- RIGHT EAR ——— RED
- LEFT EAR ——— BLUE

**HEARING LEVEL IN DECIBELS**

**KEY**

See Back for:
- SSIS
- Tone decay
- Bekesy
- Impedance

**PURE TONE TEST**

FREQUENCIES IN Hertz

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Profiles of two deaf boys,
one born with normal hearing, one born deaf

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